DEVELOPER TRAINING CONFERENCE
IN THE HEART OF LAS VEGAS

LAS VEGAS
CODE ON THE STRIP

MARCH 1-6, 2020

IN-DEPTH TECHNICAL CONTENT ON:

- DevOps in the Spotlight
- Cloud, Containers and Microservices
- AI, Data and Machine Learning
- Developing New Experiences
- Delivery and Deployment
- .NET Core and More
- Full Stack Web Development

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A MESSAGE FROM THE CONFERENCE CO-CHAIRS

LAS VEGAS IS KNOWN for its gaming, entertainment and dizzying array of dining options but, even more important, it's the home of Visual Studio Live! from March 1st through 6th, 2020!

Today, every company is a software company and if you're not staying ahead of the newest technologies then, really, you're falling behind. With a fantastic location, unparalleled networking, and great technical learning, Visual Studio Live! Las Vegas is here to help you to get ahead and stay there, ready to help your team and organization be on top.

We're Andrew Brust, Rockford Lhotka, and Brian Randell, and as Conference Co-Chairs for Visual Studio Live!, we'd like to personally invite you to join us at the Bally’s Hotel & Casino in Las Vegas. As veterans of the show and longtime speakers, we may be biased, but we firmly believe that an in-person experience, where you get to have two-way conversations about the latest tools and technologies, with some of the finest expert speakers in the business—and with the chance to network with your peers—continues to deliver the highest level of value. The rapid pace of change means there's always more you need to know. Our cohort of technical speakers will be ready to help you know what's ready, what's not, and provide their expert advice and knowledge on how to build the best solutions for your customers.

Visual Studio Live! in Las Vegas gives you a rich multi-track event with great 75-minute breakout sessions, deep dives, a full day of hands-on-lab training, and two full days of deep workshops, covering a wide array of development technologies for everyone. From security to databases to the latest Web and desktop technologies, we've got you covered. Our speakers will present on machine learning, serverless, and other cloud technologies in-depth, with experience on Windows, macOS, Linux, and mobile platforms.

We have picked every hands-on-lab, workshop, deep dive, and session with the goal of transferring knowledge to you, so you can be a better developer and help your organization succeed in this ever-changing world.

You'll find coverage on Microsoft Visual Studio 2019, .NET Core, DevOps, quantum computing and modern data warehouse technology. If the Web is more your style, you'll find sessions on JavaScript, TypeScript, Angular, and Blazor on the client, as well as ASP.NET and ASP.NET Core on the server. Feeling confused about .NET? We've got sessions to clear it up. Want to improve your DevOps? We've got coverage of numerous topics to help you do just that. Want to be an expert on Entity Framework Core? We've got sessions for that too! Overall, our speakers will answer your questions with practical guidance on native client development, Web, database and more.

Our workshop content provides coverage of ASP.NET Core and Entity Framework Core, app user experience design, in-depth coverage of Visual Studio 2019, microservices with Docker containers on Azure, and SQL Server for developers. Want to get your hands dirty? We've got four great all-day hands-on-labs covering Cloud-Native Development, DevOps with GitHub, machine learning with C# and Visual Studio, and modern security architecture for ASP.NET Core 3. Hungry for even more? We've also got deep dives into Blazor, Angular, and CosmosDB. Our sessions, hands-on-labs, and workshops drill deep into the subjects you need to master and the fundamentals that are always important.

Our industry continues its march toward the future. To keep up, you need to absorb rapidly and adapt. Go beyond Internet-based content to a live experience, where you get to ask questions in real-time and engage directly with the experts and your peers. Find a way to get to Visual Studio Live! Las Vegas and get the tools to help yourself grow.

We hope to see you there!

VISUAL STUDIO LIVE! CONFERENCE CO-CHAIRS

Andrew Brust
Founder & CEO, Blue Badge Insights

Rockford Lhotka
CTO, Magenic

Brian Randell
Partner, MCW Technologies
TEN REASONS TO ATTEND VISUAL STUDIO LIVE! LAS VEGAS 2020

10 GO ALL IN! Code and Cruise the Strip at Visual Studio Live! Headquarters Bally’s Hotel & Casino.

9 YOU GOTTA BEAT THE TRAFFIC TO STAY AHEAD — get up to speed on what’s happening on the .NET developer landscape now, and learn what’s coming next to get out ahead of the competition.

8 LEARN FROM LIKE MINDS — From the networking breakfasts, to evening activities, to just sitting next to someone new at lunch, you’ll have the unique chance to learn from and share with your peers, all week long!

7 ACCESSIBLE EXPERTS — What separates Visual Studio Live! from other conferences (and internet-based training) is the unparalleled access to the speakers. Get your questions answered in-between sessions, during meals and at fun evening events.

6 REV UP AND FINISH STRONG WITH FULL-DAY WORKSHOPS — Get two days (pre- and post- conference) of education on the hottest topics on the .NET Highway.

5 USE YOUR MIRRORS: PERSPECTIVE FROM ALL SIDES — Our speakers include both unbiased industry experts and Microsoft insiders, so you’ll hear every side of the story on the most recent software and industry updates.

4 GET UNDER THE HOOD WITH VSLIVE! HANDS-ON LABS — Choose from four in-depth HOLs and get hands-on with DevOps Using GitHub, Machine Learning Using C#, ASP.NET Core 3, or Cloud-Native .NET Development.

3 FILL UP ON CONTENT. We offer 6 days of educational sessions, hands-on labs, and workshops on hot topics like Visual Studio 2019, .NET Core, C#, DevOps, quantum computing, JavaScript, TypeScript, Angular, Blazor, CosmosDB, and more!

2 WE PUT YOU IN THE DRIVER’S SEAT — With over 65 sessions, workshops, and hands-on labs in a variety of tracks, you’re in control of what sessions you attend and when. You aren’t bound to any one session or track!

1 LET VSLIVE! BE YOUR ROAD MAP. We’ll help navigate the .NET highway, avoid common road blocks and cruise through your current projects with ease. For over 26 years, Visual Studio Live! has been THE resource for .NET developer-focused education!
THE FUN STUFF: VISUAL STUDIO LIVE! LAS VEGAS EVENTS & ACTIVITIES

YOUR ATTENDANCE AT VISUAL STUDIO LIVE! LAS VEGAS is about learning from your peers as well as the experts; make the most of your time and add these events to your itinerary!

DINE-A-ROUND DINNER
Monday, March 2, 6:00pm – 8:00pm
Join other conference attendees and speakers for a casual, no-host dinner and make a few new friends while enjoying the fun and delicious restaurants in or around Bally’s Hotel & Casino. This is your opportunity to meet fellow attendees and start friendships that can last for the week or even longer. Attendees can break into smaller groups based on where everyone wants to dine and head off to dinner. Everyone is responsible for their own drinks and dinner.

WELCOME RECEPTION
Tuesday, March 3, 4:15pm – 5:30pm
All conference attendees are invited to celebrate the start of Visual Studio Live! Las Vegas at the Welcome Reception. Join us in the expo area to network with fellow conference attendees and speakers, talk with the event sponsors, enjoy complimentary drinks and hors d’oeuvres, and participate in the conference raffle.

BIRDS OF A FEATHER LUNCH
Wednesday, March 4, 12:00pm – 1:00pm
Enjoy lively lunchtime discussions by joining one of our table topic conversations. Tables will have a designated topic to help start discussions and interact with your fellow attendees. You may even learn a new trick or two or some great tips to take back to the office.

VSLIVE! CHOOSE YOUR OWN LAS VEGAS FUN
(After Hours)
VSLive! wants you to experience Las Vegas thrill rides and activities outside of the session rooms, so we are giving every conference attendee a ticket to adventure. Pick up your ticket to your chosen adventure at registration to enjoy at your leisure.

- High Roller Observation Wheel – Check out the lights of Las Vegas from the world’s largest observation wheel. Topping out at 550 feet, the wheel features 28 glass-enclosed cabins that frame breathtaking views of Las Vegas during the 30 minutes it takes to complete one full revolution.

- FlyLINQ Zipline – Fly 12 stories above the LINQ Promenade on the strip’s only zipline. You’ll zip from Las Vegas Boulevard soaring over an open-air shopping and dining area and land at the High Roller Observation Wheel. This adventure is for thrill-seekers looking for an exhilarating ride. Riders will fly in a seated position and must weigh between 60 and 300 pounds.

- Eiffel Tower Viewing Deck – The replica of Paris’ famous Eiffel Tower has become an iconic part of the Las Vegas skyline. Perched 460 feet up the viewing deck is a great place to get 360-degree views of Las Vegas. Eiffel Tower staff point out Las Vegas landmarks and the view of the Bellagio water fountain are spectacular.
## AGENDA-AT-A-GLANCE

### DevOps in the Spotlight
- Cloud, Containers and Microservices
- AI, Data and Machine Learning
- Developing New Experiences
- Delivery and Deployment
- .NET Core and More
- Full Stack Web Development

### Full Day Hands-On Labs: Sunday, March 1, 2020
(Separate entry fee required)

<table>
<thead>
<tr>
<th>START TIME</th>
<th>END TIME</th>
<th>Session Title</th>
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<tbody>
<tr>
<td>9:00 AM</td>
<td>6:00 PM</td>
<td>Full Day Hands-On Lab: Better DevOps Using GitHub for Open Source and Inner-Source</td>
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<td></td>
<td></td>
<td>Implementing Machine Learning Using C# and Visual Studio</td>
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<td></td>
<td></td>
<td>Modern Security Architecture for ASP.NET Core 3</td>
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<td></td>
<td></td>
<td>Full Day Hands-On Lab: Hands-On with Cloud-Native .NET Development</td>
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### Pre-Conference Workshops: Monday, March 2, 2020
(Separate entry fee required)

<table>
<thead>
<tr>
<th>START TIME</th>
<th>END TIME</th>
<th>Workshop Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>8:00 AM</td>
<td>5:00 PM</td>
<td>Workshop: Building Web Applications with ASP.NET Core and EF Core</td>
</tr>
<tr>
<td>6:00 PM</td>
<td>8:00 PM</td>
<td>Dine-A-Round</td>
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</tbody>
</table>

### Day 1: Tuesday, March 3, 2020

<table>
<thead>
<tr>
<th>START TIME</th>
<th>END TIME</th>
<th>Session Title</th>
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<tbody>
<tr>
<td>8:00 AM</td>
<td>9:15 AM</td>
<td>Angular Best Practices</td>
</tr>
<tr>
<td>9:30 AM</td>
<td>10:45 AM</td>
<td>RXJS in Angular Best Practices</td>
</tr>
<tr>
<td>11:00 AM</td>
<td>12:00 PM</td>
<td>UX Design Fundamentals: What Do Your Users Really See?</td>
</tr>
<tr>
<td>12:00 PM</td>
<td>1:00 PM</td>
<td>Building Data Pipelines for Modern Data Warehouse with Spark and .NET in Azure</td>
</tr>
<tr>
<td>12:00 PM</td>
<td>1:00 PM</td>
<td>Building a Modern Data Warehouse in Microsoft Azure</td>
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<tr>
<td>1:00 PM</td>
<td>1:30 PM</td>
<td>Keynote: Actually, It's Open Source That's Eating the World</td>
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<tr>
<td>1:30 PM</td>
<td>2:45 PM</td>
<td>Securing APIs with ASP.NET Core 3, Visual Studio 2019, and IdentityServer4</td>
</tr>
<tr>
<td>3:00 PM</td>
<td>4:15 PM</td>
<td>Building Data Pipelines for Modern Data Warehouse with Spark and .NET in Azure</td>
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<tr>
<td>3:00 PM</td>
<td>4:15 PM</td>
<td>Exploring Serverless Architecture</td>
</tr>
<tr>
<td>3:00 PM</td>
<td>4:15 PM</td>
<td>Creating Business Applications Using Blazor (Razor Components)</td>
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<tr>
<td>4:15 PM</td>
<td>5:30 PM</td>
<td>An Introduction to OpenID Connect and OAuth 2.0 using Azure B2C</td>
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<tr>
<td>4:15 PM</td>
<td>5:30 PM</td>
<td>Building a Modern Data Warehouse in Microsoft Azure</td>
</tr>
<tr>
<td>4:15 PM</td>
<td>5:30 PM</td>
<td>Building Business Applications Using Bots</td>
</tr>
<tr>
<td>4:15 PM</td>
<td>5:30 PM</td>
<td>Welcome Reception</td>
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Speakers and sessions subject to change

Virtual Track Key:  
- Microsoft Sessions
- Foundational Sessions

Register Now at VSLive.com/LasVegas
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<th>START TIME</th>
<th>END TIME</th>
<th>Session</th>
<th>Presenter(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>8:00 AM</td>
<td>9:15 AM</td>
<td>W01 Getting Started with ASP.NET Core 3.X</td>
<td>Philip Japikse</td>
</tr>
<tr>
<td>9:30 AM</td>
<td>10:45 AM</td>
<td>W05 JavaScript for the C# (and Java) Developer</td>
<td>Philip Japikse</td>
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<tr>
<td>11:00 AM</td>
<td>12:00 PM</td>
<td>W03 Storage Strategies in Microsoft Azure</td>
<td>Eric D. Boyd</td>
</tr>
<tr>
<td>9:30 AM</td>
<td>10:45 AM</td>
<td>W02 Deep Dive: Blazing the Web — Building Web Applications in C# with Blazor</td>
<td>Jason Bock</td>
</tr>
<tr>
<td>11:00 AM</td>
<td>12:00 PM</td>
<td>W04 DevOps for Desktop Applications</td>
<td>Oren Novotny</td>
</tr>
<tr>
<td>12:00 PM</td>
<td>1:00 PM</td>
<td>GENERAL SESSION: The Care and Feeding of Software Engineers</td>
<td>Heather Downing, Coder. Entrepreneur. Passionate for the impossible</td>
</tr>
<tr>
<td>1:30 PM</td>
<td>2:20 PM</td>
<td>W08 Fast Focus: Getting Started with ASP.NET Core Razor Pages</td>
<td>Walt Ritscher</td>
</tr>
<tr>
<td>2:00 PM</td>
<td>3:45 PM</td>
<td>W10 Fast Focus: Onboard New Developers Faster with Custom Snippets!</td>
<td>Jennifer Wadella</td>
</tr>
<tr>
<td>3:00 PM</td>
<td>4:00 PM</td>
<td>W14 Supporting an Old-Fashioned AngularJS App in a Modern TypeScript World</td>
<td>Jennifer Wadella</td>
</tr>
<tr>
<td>4:00 PM</td>
<td>5:15 PM</td>
<td>W16 Run Your Business Logic Everywhere with WebAssembly, Containers, and CSLA.NET</td>
<td>Rockford Lhotka</td>
</tr>
<tr>
<td>5:00 PM</td>
<td>6:00 PM</td>
<td>W18 Busy Developer’s Guide to Flutter</td>
<td>Ted Neward</td>
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<tr>
<td>6:00 PM</td>
<td>7:00 PM</td>
<td>W19 An Introduction to Service Meshes on Kubernetes</td>
<td>Marcel de Vries</td>
</tr>
<tr>
<td>7:00 PM</td>
<td>8:00 PM</td>
<td>W20 Moving Desktop Apps to .NET Core 3.0</td>
<td>Tim Corey</td>
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Speakers and sessions subject to change

After Hours Fun: Choose Your Las Vegas Adventure at VSLive! - High Roller Observation Wheel, FlyLINQ Zipline, or Eiffel Tower Viewing Deck
### AGENDA-AT-A-GLANCE (continued)

#### DevOps in the Spotlight

- **TH01** 8:00 AM - 9:15 AM
  - Laurie Barth

#### Cloud, Containers and Microservices

**Microsoft Power Platform, RAD Done Right: Building Automated Workflows with Microsoft**
- **TH02** 8:00 AM - 9:15 AM
  - Walt Ritscher

**Modern Desktop Development with .NET Core 3.0**
- **TH03** 9:30 AM - 10:45 AM
  - Tim Corey

**Feature Flags for Better DevOps**
- **TH04** 9:30 AM - 10:45 AM
  - Mickey Gousset

#### AI, Data and Machine Learning

**The Multithreaded Web: A Tale of Workers**
- **TH05** 8:00 AM - 9:15 AM
  - Ramón Guijarro

**The Definitive Guide to Organizing Community Events**
- **TH06** 9:30 AM - 10:45 AM
  - Jennifer Wadella

**AI and Analytics with Apache Spark and Azure Databricks**
- **TH07** 11:00 AM - 12:15 PM
  - Andrew Brust

**Power BI: What Have You Done For Me Lately?**
- **TH08** 11:00 AM - 12:15 PM
  - Andrew Brust

#### Developing New Experiences

**Learn to Love Lamdas (and LINQ, Too!)**
- **TH09** 11:00 AM - 12:15 PM
  - Jeremy Clark

**Run Faster: Parallel Programming in C#**
- **TH13** 12:15 PM - 2:30 PM
  - Jeremy Clark

**Redux is Dead, Long Live Redux!**
- **TH17** 1:15 PM - 3:00 PM
  - Ramón Guijarro

**How to Talk Like an Engineer**
- **TH14** 1:15 PM - 3:00 PM
  - Laurie Barth

#### Delivery and Deployment

**Get Your Poker Face On: How to Use Planning Poker to Slay Project Estimations**
- **TH10** 8:00 AM - 9:15 AM
  - Laura B. Janusek

**Security in Your Pipelines. The Shift to Rugged DevOps**
- **TH19** 2:45 PM - 4:00 PM
  - René van Osnabrugge

#### .NET Core and More

**Microsoft Power Platform, RAD Done Right: Building Automated Workflows with Microsoft**
- **TH02** 9:30 AM - 10:45 AM
  - Walt Ritscher

**The Definitive Guide to Organizing Community Events**
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**Power BI: What Have You Done For Me Lately?**
- **TH08** 11:00 AM - 12:15 PM
  - Andrew Brust

#### Full Stack Web Development

**Deep Dive on Cosmos DB**
- **TH15** 12:15 PM - 2:30 PM
  - Leonard Lobel

**Implementing Zero Downtime Application Deployments on Azure PaaS**
- **TH16** 12:15 PM - 2:30 PM
  - Marcel de Vries

### Post-Conference Workshops: Friday, March 6, 2020

<table>
<thead>
<tr>
<th>START TIME</th>
<th>END TIME</th>
<th>Workshop Details</th>
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<tbody>
<tr>
<td>8:00 AM</td>
<td>5:00 PM</td>
<td>Building, Running &amp; Continuously Deploying Microservices with Docker Containers on Azure</td>
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<td></td>
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<td>Marcel de Vries &amp; René van Osnabrugge</td>
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<tr>
<th>START TIME</th>
<th>END TIME</th>
<th>Workshop Details</th>
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<tbody>
<tr>
<td>8:00 AM</td>
<td>5:00 PM</td>
<td>Developer Dive into SQL Server</td>
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<td></td>
<td>Leonard Label</td>
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<table>
<thead>
<tr>
<th>START TIME</th>
<th>END TIME</th>
<th>Workshop Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>8:00 AM</td>
<td>5:00 PM</td>
<td>Hands-On Workshop: Serverless + GraphQL—Build a GraphQL API, Connect it to a Serverless Function, and Deploy!</td>
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<tr>
<td></td>
<td></td>
<td>Chris Noring</td>
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Speakers and sessions subject to change

Virtual Track Key: ▶️Microsoft Sessions □Foundational Sessions

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AGENDA-AT-A-GLANCE (continued)
GENERAL SESSIONS

WANT A FRONT-ROW SEAT TO THE FUTURE OF TECHNOLOGY? Attend the general sessions for Visual Studio Live! Las Vegas to learn what’s hot on today’s tech landscape and what exciting developments lie ahead for this year and beyond.

KEYNOTE:
Actually, It’s Open Source That’s Eating the World
Tuesday, March 3, 11:00am – 12:00pm

Edward Thomson
Product Manager, GitHub

When Edward Thomson joined Microsoft ten years ago, open source was still “a cancer”. But a decade later, the world has changed. Software isn’t eating the world anymore, now open source is eating the world and GitHub has become the largest developer community on the planet. Edward will explain how to pivot a company to understand and accept open source, to use and contribute open source successfully, and how to apply the open source ideologies of openness and collaboration “within your firewall” to empower your organization to achieve more.

Edward Thomson is a Product Manager at GitHub. Prior to that, he was a software engineer at GitHub, Microsoft and SourceGear. He’s a maintainer of open source projects, and a passionate advocate for free and open source software.

GENERAL SESSION:
The Care and Feeding of Software Engineers
Wednesday, March 4, 11:00am – 12:00pm

Heather Downing
Coder. Entrepreneur.
Passionate for the impossible

After years of excellence as a developer who gets things done, you are rewarded with a leadership title and more responsibility. Only now you are expected to manage people and not just code. What motivated you to improve doesn’t seem to always work on your team. So what do you do? We will explore the art of managing talented people and learning what the human needs for guidance and support from their leader.

Heather Downing is a passionate coder and entrepreneur. She has experience working with Fortune 500 companies building enterprise level mobile and .Net applications. She spends her spare time at tech conferences supporting the growth of new developers of all genders, ages and backgrounds. When not coding, Heather spends her time as a competitive equestrian and learning the art of mounted archery.

LUNCH & LEARN:
Rock Your LinkedIn Profile and Get More Networking Value
Thursday, March 5, 12:15 – 1:15pm

Walt Ritscher
Senior Staff Instructor, LinkedIn Learning / Lynda

People from all professions use LinkedIn to find employment and stay in touch with their professional contacts. But there is much more to the platform. Sure, 35 million job seekers visit LinkedIn every month. But those numbers are dwarfed by the hours LinkedIn members spend engaging with their peer community, learning new skills, and interacting with other non-recruitment areas of the LinkedIn platform.

At its core, LinkedIn exists to connect you with opportunities. Research shows that members who write a well-crafted profile and keep it updated regularly are more engaged with their community and get more value from the site. Knowing how to build a dynamic profile that tells your story is the key to unlock the power of LinkedIn. By keeping it fresh, you get connected with like-minded peers and get a more interesting news feed. Share your passions and you’ll find ways to engage with charities and other worthy organizations. Share your skills and get relevant training to fill in your knowledge gaps.

This session is full of tips so you can ROCK YOUR PROFILE and get the most out of the LinkedIn ecosystem. Plus learn about additional services available from LinkedIn that you haven’t discovered yet!

Walt Ritscher’s enthusiasm for crafting software interfaces blossomed early. Just a few days after discovering how to move pixels around a computer screen he was devouring books on the topic of computer graphics and UI design. Before long he was sharing his discoveries with other technology buffs, a lifelong pursuit that has led to teaching engagements at universities, private training companies and the international conference circuit. As a consultant, he has worked with a wide spectrum of clients, including Microsoft, HP, and Intel. He is now a staff author at Lynda.com, part of the LinkedIn family, where his content team produces technical training courses for software developers.

“VSLIVE! LAS VEGAS HAD GREAT SPEAKERS, TOPICS, AND KEYNOTES WITH A VARIETY OF VIEWPOINTS.”

– Nick Lundin, SML RFID
FULL-DAY HANDS-ON LABS  (Separate entry fee required)

Visual Studio Live! Las Vegas offers four instructor-led, pre-conference Hands-On Labs to help you take your dev skills to a new level. Get intensive, in-depth training to complete your conference experience.

Topics covered include:
- DevOps with GitHub
- Cloud-Native Development
- Modern Security Architecture for ASP.NET Core 3
- Implementing Machine Learning Using C# and Visual Studio

These labs are presented on a Bring Your Own Laptop (BYOL) basis. Attendance for each Hands-On Lab is limited, so be sure to sign up early!

HOL01
Full Day Hands-On Lab: Better DevOps using GitHub for Open Source and Inner-Source
Intermediate
BRIAN RANDELL & MICKEY GOUSSET
Sunday, March 1, 9:00am – 6:00pm

With over 40 million users, GitHub is the center of the open source universe. Yet GitHub is also a wonderful platform doing DevOps for your private and inner-source projects. Join Brian and Mickey as they take from start to finish building a modern cloud-first app using C# and .NET Core and get it up and running Azure.

Though the whole journey, you’ll apply good DevOps practices using GitHub Repos, GitHub Issues, Project boards, GitHub Actions, and GitHub Registry. You’ll learn how to create “shared source” and determine if you want to share only with your team using inner-source, or if you’re ready to go the whole way and start sharing code via open source. Regardless, you’ll learn best practices to build your apps better using GitHub.

You will Learn:
- How manage your code and assets with GitHub
- How manage projects with GitHub
- How to build and release with GitHub

Attendee Requirements:
You must provide your own laptop computer (Windows or Mac) for this hands-on lab.

Experience with C# coding required.

Laptop requirements:
- A Windows x64 computer with Wi-Fi where you have local administrator rights
- Visual Studio 2019 Community, Professional, or Enterprise with the ASP.NET, Database, and Azure workloads installed (additional specifics if needed will be provided two weeks before the workshop)
- A valid, active Azure subscription where you (the attendee) are an administrator

HOL02
Full Day Hands-On Lab: Implementing Machine Learning Using C# and Visual Studio
Intermediate / Advanced
JAMES MCCAFFREY
Sunday, March 1, 9:00am – 6:00pm

This workshop will teach you how to create traditional non-neural machine learning prediction systems. You will learn what six fundamental ML techniques are and what types of problems they can (and cannot) solve, implementing them using only raw C# without any external libraries.

This workshop emphasizes practical techniques, but also gives you just enough theory so you can modify and customize your systems.

Techniques covered include: logistic regression binary classification, naive Bayes multiclass classification, k-nearest neighbors classification, Thompson Sampling and epsilon-greedy bandit algorithms, and k-means clustering.

You will learn:
- What types of problems machine learning can and cannot solve
- How to implement the six fundamental ML techniques using C#
- How to interpret the results of an machine learning model

HOL03
Full Day Hands-On Lab: Modern Security Architecture for ASP.NET Core 3
Intermediate
BROCK ALLEN
Sunday, March 1, 9:00am – 6:00pm

ASP.NET Core brings many modern approaches to building web applications. Given its importance, updates to the security architecture are also included in this modern framework. This workshop will bring you up to speed on the main components in ASP.NET Core for securing your web applications and web APIs. This includes authenticating users with middleware, implementing policy-based authorization, and proper security architecture with protocols such as OpenId Connect and OAuth2. As part of our exploration into OpenID Connect and OAuth2, we will use the popular open
FULL-DAY HANDS-ON LABS (continued)

Source framework IdentityServer. Come and learn how ASP.NET Core and IdentityServer can be used to design for a modern security architecture.

You will learn:
• About authenticating users with middleware
• About single sign-on with OpenID Connect
• About protecting web APIs with OAuth 2.0

HOL 04

Full Day Hands-On Lab: Hands-On with Cloud-Native .NET Development

Introductory

ROCKFORD LHOTKA

Sunday, March 1, 9:00am – 6:00pm

In this hands-on lab you will learn how to install and interact with Docker and Kubernetes (using minikube). Using that infrastructure, you will learn how to build .NET Core apps in Visual Studio that run in a k8s environment: web apps, web APIs, and message-based services. Along the way you’ll learn numerous cloud-native best practices around microservice and message-based/event-based architecture, 12-factor design, how to avoid the fallacies of distributed computing, and more.

You will learn:
• How to install Docker and Kubernetes locally
• How to build .NET Core apps that deploy to k8s
• How to implement a microservice-based app

Attendee Requirements:
You must provide your own laptop computer, GitHub or Azure DevOps cloud subscription, and Azure subscription (from MSDN or your organization) for this hands-on lab. The latest hands-on lab content can always be found here: https://github.com/rockfordlhotka/Cloud-Native-HOL.

This includes an up to date list of knowledge, services, and workstation software you should have set up or installed before arriving at the hands-on lab: https://github.com/rockfordlhotka/Cloud-Native-HOL/blob/master/docs/prerequisites.md

Please remember that bandwidth and time are both limited at the event, so it is important to have your laptop pre-configured with the necessary software before arriving on-site. There may be some last-minute fixes to the code so we recommend waiting to clone the repository until a day or two prior to the HOL. The installation part is imperative to do in advance.

“I REALLY ENJOYED THE VARIETY OF TOPICS AND THE SPEAKERS ABILITY TO BE REALISTIC ABOUT USE CASES. BEING ABLE TO CONSTRUCTIVELY THINK ABOUT HOW TO IMMEDIATELY APPLY WHAT I’VE LEARNED AS WELL AS ROADMAP THE REST WILL BE OF GREAT BENEFIT.”

– Kevin Cox, ETM
FULL-DAY WORKSHOPS

Choose from a range of content and topics by expert presenters with Visual Studio Live! Las Vegas Pre- and Post-Conference workshops.

Topics covered include:
- A Tour of Visual Studio
- ASP.NET Core 3 Web Sites and Services
- Design an app UX in a Day
- Building and Running Microservices with Docker Containers via CI/CD on Azure
- Developer Dive into SQL Server

M01
Workshop: Building Web Applications with ASP.NET Core and EF Core
Intermediate
PHILIP JAPIKSE
Monday, March 2, 8:00am – 5:00pm
Interested in ASP.NET Core and Entity Framework Core, but not sure where to start? Start here with a full day workshop covering data access with Entity Framework Core, RESTful services with ASP.NET Core, and ASP.NET web applications using the model-view-controller pattern.
You will learn:
- How to use ASP.NET Core for web applications
- How to use EF Core for data access
- New features of ASP.NET Core and EF Core

M02
Workshop: Design an App UX in a Day
Introductory
BILLY HOLLIS
Monday, March 2, 8:00am – 5:00pm
If you’ve ever wanted to experience what it’s like to do hands-on design of an app, this is your chance. In this workshop, you’ll spend the first couple of hours learning the steps in a UX design process. Then you’ll be challenged to design a replacement for an existing app. You and your team will ask questions, prioritize design tasks, and then sketch and evaluate ideas. After seeing what other teams have produced, you’ll then get to do another round of ideation and sketching. We’ll finish up by have the class as a whole do evaluation on designs, with prizes for the team producing the winner.
You will learn:
- A lightweight UX design process optimized for developers
- Hands-on experience at design techniques
- How to help your own team embrace UX design as a discipline

M03
Workshop: A Tour of Visual Studio 2019
Intermediate
JASON BOCK
Monday, March 2, 8:00am – 5:00pm
Visual Studio is used by many .NET developers to create their applications, but just how well is the tool known? The capabilities and features within Visual Studio is vast, so much so that users may not be aware of everything that Visual Studio has to offer. In this session, you’ll get a fast-paced tour of the Visual Studio landscape, like configuration, debugging, code analysis, unit testing, performance, metrics and so much more. You’ll also see new features that are in Visual Studio 2019. At the end of this workshop, you’ll have a solid understanding of Visual Studio to quickly develop reliable, maintainable solutions.
You will learn:
- The vast Visual Studio ecosystem
- Insights into analysis tools Visual Studio to improve applications
- How to extend Visual Studio with extensions and templates

F01
Workshop: Building, Running & Continuously Deploying Microservices with Docker Containers on Azure
Intermediate
MARCEL DE VRIES & RENÉ VAN ONSABRUGGE
Friday, March 6, 8:00am – 5:00pm
You are a (lead-)developer or architect who wants to design and implement a modern Microsoft based microservices architecture using Microsoft technologies. You want to transition from a monolithic architecture to an architecture that consists out of small and independent services that you can scale independently on your different develop, test and production environments.
In this one-day Workshop we will guide you through the concepts behind Micro Services, Containers and Containerized delivery to help you build and manage MSA based systems.
We will show you how to build services and deploy them to different hosting environments like Azure ACS (with either
WORKSHOPS (continued)

Kubernetes, DC/OS or Swarm), Service fabric or on your own on premises container environment.

Topics that will be covered:
• Microservice architectures on a Microsoft Stack
• Containers & Docker on Windows
• Continuous delivery with Azure DevOps of containerized applications
• Setting up ACS clusters with Kubernetes, DC/OS or Swarm
• Deploying to different environments including clusters
• Adding Telemetry to your system to find issues in the constellation of services
• Zero downtime deployments of new versions of your application, including the database

You will learn:
• About Microservices
• How you can apply the reactive manifesto
• How to think in events versus request response
• How to build, deploy, and debug a set of Microservices
• What technologies you can use to build a Microservices Architecture on the Microsoft Stack
• What Container technology has to offer
• About building and running Docker containers on Windows
• How to set up a Containerized Delivery Pipeline
• How to build and maintain a container cluster in the cloud
• How to manage and operate a cluster

F02

Workshop: Developer Dive into SQL Server
Intermediate
LEONARD LOBEL
Friday, March 6, 8:00am – 5:00pm

This full-day workshop will get you up to speed on powerful features for developers in SQL Server. Lenni will pull no punches as he rips through the most important SQL Server programmability points in this intensive demo-packed tour.

We’ll kick things off with the most important features added to the relational engine, including broad multi-platform support across Windows, Linux, and Docker. Learn how SQL Server’s ability to run inside Docker containers on both Windows and Mac has revolutionized the way developers work with Microsoft’s venerable database engine. Then you’ll explore all the latest T-SQL enhancements, including more convenient DDL statements, new string split, join, and aggregate functions, partition truncation, and other language improvements added in SQL Server 2017, plus many other T-SQL capabilities, such as windowing (OVER clause), running and sliding aggregates, the THROW statement, server-side paging, the SEQUENCE object, metadata discovery techniques, and more new functions.

Next, we’ll explore the latest security features of the relational engine, such as dynamic data masking, row-level security, and always encrypted. We’ll also preview SQL Server 2019’s support for secure enclaves to enable rich query of encrypted data in use. Other innovative capabilities include “stretch” database (allow select tables in an on-premises database to be transparently relocated in Azure SQL Database), temporal data (enable “time travel” to access data as it existed at any point in time), and integrated JSON support. We’ll wrap up with the graph support recently baked into the relational engine, which lets you build data models that focus on the interconnected relationships of your entities.

You’ll learn a ton of new SQL Server features in this information-packed day!

You will learn:
• How to boost your productivity by running SQL Server inside Docker containers
• The latest T-SQL language enhancements
• Discover the newest SQL Server developer features (DDM, RLS, Always Encrypted, Stretch DB, Temporal, JSON, graph)

F03

Hands-On Workshop: Serverless + GraphQL - Build a GraphQL API, Connect it to a Serverless Function, and Deploy!
Intermediate
CHRIS NORING
Friday, March 6, 8:00am – 3:00pm

Join us for this in-depth hands-on workshop and learn how to:
• Build a GraphQL API and in doing so they learn the fundamentals of creating a schema, define resolvers and query said API,
• Create microservices and Dockerize them, this will explain the concepts of a Microservice and how you can prepare this for the Cloud through Dockerizing it. It also makes it consumable for a GraphQL API, which we will show,
• Host the API in a Serverless function and deploy the same, this will teach some fundamentals in Serverless function creation, debugging and deployment.

Attendee Requirements:
You must provide your own laptop computer (Windows or Mac) for this hands-on workshop.

Laptop Computer Configurations—please install prior to joining us in Las Vegas:
• .NET Core
• VS or VS Code (with C# extension)
• Docker + Docker Compose, Docker is an optional part of the workshop but highly recommended
• For deploy section of the workshop, Having set up a free Azure account https://azure.microsoft.com/en-us/free/?wt.mc_id=devto-blog-chnoring
• Node.js (is needed for Azure Functions dependencies)

For Windows
• Have Node.js installed and then run “npm install -g azure-functions-core-tools@2” in the terminal
For Mac:
• brew tap azure/functions
• brew install azure-functions-core-tools
SESSION DESCRIPTIONS BY TRACK

DEVOPS IN THE SPOTLIGHT

DevOps has been called the second decade of Agile. While it's easy to get obsessed over tools, it's really about organizational transformation. It starts with people, better process and then, yes, good products can make all the difference. DevOps is all about continuous value delivery. You have a role to play when it comes to DevOps, and in this track, you'll learn about the tools, techniques, and concepts that you can immediately apply to your daily work.

You’ll find coverage of:
• Getting Started with DevOps
• Azure DevOps
• DevOps with GitHub
• DevOps for Desktop Applications
• Using NuGet and Azure DevOps Artifacts
• A Software Engineer’s Guide to DevOps
• Azure Pipelines Tips and Tricks
• Feature Flags
• Site Reliability Engineering (SRE) in Azure
• Microsoft with Docker Containers

T03

Build a DevOps Culture: Microsoft’s Journey to Adopt an Agile Mindset and DevOps Culture

Introductory
Mickey Gousset
Tuesday, March 3, 8:00 – 9:15am

This is NOT a session about MS DevOps tools. This is the story of how the Azure DevOps team transformed from shipping an on-premise server product every couple of years, to shipping a cloud service multiple times a day. In the process, almost everything about how this team of 800 people work has changed. We had to figure out how to do agile at scale, how to transform into a microservice cloud architecture, completely restructure teams and roles, throw out a suite of 10’s of thousands of tests and start over, and go from zero telemetry, to 8TB/day, as well as figure out how to interpret the data. Many mistakes were made along the way, and I’ll be sharing the good, the bad, and lessons learned.

You will learn:
• How the Azure DevOps Team ships software every three weeks
• How Microsoft does Agile development at scale
• The good, bad, and lesson’s learned on Microsoft’s DevOps Journey

W04

DevOps for Desktop Applications

Introductory
Oren Novotny
Wednesday, March 4, 8:00 – 9:15am

Client applications have unique requirements for DevOps, this session will show you how to use Azure to deploy MSIX based applications in an efficient and secure way. We will cover branching strategies, versioning, packaging and automatic deployment using Visual Studio App Center and Azure Pipelines.

You will learn:
• How to package desktop apps as MSIX
• About branching, versioning strategies
• About automatic build and deployment

W07

Private and Public: Build & Release Custom NuGet Packages and more via Azure DevOps and GitHub

Introductory
Oren Novotny
Wednesday, March 4, 9:30 – 10:45am

Sharing is caring and developers in both the private source and open source communities around Java, JavaScript, Python and .NET. NuGet packages are the de-facto way to package, distribute, and consume dependencies in the .NET ecosystem. It supports public and private distribution and is a great way for teams to share common code. In this session, you’ll learn how to create packages for your own libraries, setup a private repository for your team, and how to build a DevOps pipeline to glue it all together using Azure DevOps and GitHub.

You will learn:
• How to create NuGet packages
• How to setup and use a private NuGet repository
• How to build a DevOps pipeline for CI/CD of your packages

W13

Fast Focus - Azure Pipelines Tips and Tricks

Intermediate / Advanced
Mickey Gousset
Wednesday, March 4, 2:00 – 2:20pm

Sometimes all you need are some key tips to enhance your Azure Pipelines. That’s what this fast focus session is all about. If you want to learn some tips and tricks for building, running, and debugging your Azure Pipelines, this is where you want to be.

You will learn:
• What Azure Pipelines are
• Tips for building/running Azure Pipelines
• Tips for debugging Azure Pipelines

W17

Deep Dive: Azure DevOps vs. GitHub - Fight!

Intermediate
Brian Randles
Wednesday, March 4, 2:30 – 5:15pm

In June of 2018, Microsoft announced their intention to acquire GitHub. At the end of October 2018, Microsoft confirmed the acquisition was complete. Microsoft always wanted to make it easier to build solutions on their stack—whether that be on-premises or in the cloud. With Azure DevOps, they evolved their original team development stack to work with Windows, macOS, Linux, mobile, and more. With GitHub, that had a platform that represents the center of open source and is designed for distributed teams from the start.

A big question for teams committed primarily to the Microsoft platform in 2010 is which DevOps tools they should use. In this demo heavy deep dive, Brian will compare and contrast Azure
SESSION DESCRIPTIONS BY TRACK (continued)

TH08
A Software Engineer’s Guide to DevOps
Introductory
LAURIE BARTH
Thursday, March 5, 9:30 – 10:45am
I’m a software engineer who spends her time writing code and developing apps. I have a pretty good grasp of the vocabulary and technologies relevant to my job. But what happens when another facet of engineering, one that is gaining a lot of traction and has a large footprint of its own starts becoming more and more relevant to my day to day tasks? Well, that’s exactly what happened to me last year when DevOps became a big part of my role. This is my attempt to impart all of that knowledge onto you.
You will learn:
• The concepts and goals behind DevOps
• About DevOps technologies
• How code gets from a local machine to production

TH16
Implementing Zero Downtime Application Deployments on Azure PaaS
Introductory / Intermediate
MARCEL DE VRIES
Thursday, March 5, 1:15 – 2:30pm
How can I deploy my applications to Azure PaaS like Azure Web Apps and AKS without having any downtime? How can I automate this and how can I ensure my customers won’t notice changes are happening, even when you need to update your database schema? In this session I will show you how to use Azure DevOps Build and Deployment pipelines to deliver your application to production many times a day while not interrupting your users.
You will learn:
• Techniques to upgrade your database without downtime
• How to deploy to Kubernetes without downtime
• How to deploy to Azure Web Apps without downtime

TH04
Feature Flags for Better DevOps
Intermediate
MICKEY GOUSSET
Thursday, March 5, 8:00 – 9:15am
Feature Flags provide a set of patterns that can help your team deliver new functionality to users rapidly and safely. In this session, Mickey will cover the what of feature flags—also known as feature toggles. You’ll then learn some uses cases for feature flags like separating code deployments from feature releases, doing canary launches, and testing in production. You’ll learn how the Azure DevOps team uses feature flags and see how you can add feature flags to your own apps with examples using ASP.NET and custom code as well as a commercial product, LaunchDarkly, which offers features flags as a service.
You will learn:
• Why feature flags are critical to a high-functioning DevOps environment
• How to add feature flags to your current code
• How the Azure DevOps team at Microsoft uses feature flags

TH12
When “We Are Down” Is Not Good Enough. Site Reliability Engineering (SRE) in Azure
Intermediate
RENÉ VAN OSNABRUGGE
Thursday, March 5, 11:00am – 12:15pm
The more we are connected and the more others are connected to us, the more important reliability of your sites becomes. Site Reliability Engineering is an engineering discipline devoted to helping an organization sustainably achieve the appropriate level of reliability in their systems, services, and products. But what does this mean, and how do get started with this?
In this session, René will talk about the concepts of Site Reliability Engineering and use Microsoft Azure to implement some of the concepts and practices.
You will learn:
• About Site Reliability Engineering
• How can you get started with SRE
• How to use Azure to implement some of the SRE concepts

TH19
Security in Your Pipelines. The Shift to Rugged DevOps
Intermediate
RENÉ VAN OSNABRUGGE
Thursday, March 5, 2:45 – 4:00pm
Putting Developers and IT-Pros in one team does not make it a DevOps team. And even when they work smoothly together there is always Security that needs to be addressed. Build and Release Pipelines take care of building and deploying your application, but are your pipelines secure? And the code that you are deploying? With many releases a day, security officers will not be able to verify each release. Rugged DevOps is all about securing your assets and your pipeline and really embed Security in to your DevOps process.
In this talk I will guide you through the concepts of Rugged DevOps, the risks companies are currently facing and talk about some strategies and tools which can help you embed security in to your DevOps processes.
You will learn:
• About the concepts of Rugged DevOps
• How to embed security in your pipelines
• How to detect, respond and recover in production

“THIS WAS A GREAT CONFERENCE WITH TIMELY AND RELEVANT INFORMATION. IT WAS GREAT TO BE ABLE TO SIT AT A LUNCH TABLE WITH THE SPEAKERS AND JUST CHAT ABOUT ANYTHING!”
– Dave Buhl, Frontline Education
SESSION DESCRIPTIONS BY TRACK (continued)

CLOUD, CONTAINERS, AND MICROSERVICES

Cloud computing is no longer new. For most organizations, it’s not a matter of “if”, it’s more about how much. Container technologies such as Docker and Kubernetes (aka k8s) are having a large impact on cloud computing, as well as on software architecture. This is perhaps most clear when thinking about service-oriented, or microservice, software architectures and how they can be used to leverage cloud- and container-based environments. It is hard to imagine any enterprise development scenario where one or more of these trends would not be high on the list of critical skills.

This track includes coverage of the following:
• Busy Developer’s Guide to the Clouds
• Azure Serverless 101
• Serverless Architecture
• Building Business Applications using Bots
• Azure Storage Strategies
• Complex Event Processing and Messaging Patterns
• Service Meshes on Kubernetes
• Cloud-Native Development

T15

Building Business Applications Using Bots

MICHAEL WASHINGTON

Tuesday, March 3, 3:00 – 4:15pm

Communication with customers and employees is improved when you open the channels of text and voice communication using bots. This beginner-level session will teach you how to leverage Microsoft Cognitive services to design, train, and deploy your custom bots and consume them in your custom applications and other channels such as Skype, Facebook, and Amazon Alexa.

You will learn:
• How to create bots using QnA Maker and LUIS
• How to enhance a bot created with Dynamics 365 Virtual Agent for Customer Service
• How to deploy bots to Skype and Alexa

W06

Busy Developer’s Guide to the Clouds

TED NEWARD

Wednesday, March 4, 9:30 – 10:45am

Microsoft has one, Amazon has one, but it turns out that there’s a lot of different developer-focused cloud environments out there, and sometimes it’s exactly what you need to get your project going quickly—assuming you know it exists. In this session, we’re going to take a survey of a variety of different cloud providers, many with wildly varying different approaches to “what developers need”, and give you a series of ideas to explore the next time the boss says, "We need to move into the cloud!"

You will learn:
• About Microsoft Azure data services
• How to work with each Azure data service
• Scenarios for using each data service and when to use them together

W03

Storage Strategies in Microsoft Azure

ERIC D. BOYD

Wednesday, March 4, 8:00 – 9:15am

Microsoft Azure provides a plethora of options for data storage and trying to make sense of it all can be overwhelming. In this session, you will explore the Azure data services including SQL Database, Cosmos DB, Blob Storage, and more. We will walk through the scenarios that each data service addresses, and we will dive into how to work with each of them. Lastly, we will explore the factors that encourage using one service over another when multiple fit into your solution and how they can complement each other when used together.

You will learn:
• Overview of Azure data services
• How to work with each Azure data service
• Scenarios for using each data service and when to use them together

W12

Fast Focus: Serverless of Azure 101

ERIC D. BOYD

Wednesday, March 4, 2:00 – 2:20pm

Learn what serverless compute is all about and how you get started with serverless in Azure. Get an overview of developing and running serverless code in Azure. Explore how to integrate with other services, and trigger your code from events within and outside of Azure. And leave this session understanding the billing model, so you’re prepared when estimating the cost of your apps.

You will learn:
• Overview of serverless compute
• How to get started with Azure Functions
• Understanding Azure Functions pricing
### SESSION DESCRIPTIONS BY TRACK (continued)

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| **W15** | Complex Event Processing and Messaging Patterns | Introductory / Intermediate | Wednesday, March 4, 2:30 – 3:45pm | ERIC D. BOYD | Distributed applications, microservices solutions and systems at scale depend on asynchronous messaging and eventing to achieve their goals. In this session, learn how to effectively utilize messaging and eventing solutions with common complex event processing patterns like event sourcing, CQRS, and more. You’ll also learn how to develop solutions implementing these patterns using platforms like Service Bus and Event Hubs. You will learn:  
- About complex event processing and messaging  
- How to architect messaging and eventing solutions  
- How to get started developing solutions using Service Bus and Event Hubs |
| **W19** | An Introduction to Service Meshes on Kubernetes | Introductory / Intermediate | Wednesday, March 4, 4:00 – 5:15pm | MARCEL DE VRIES | A service mesh is an infrastructure layer that allows you to manage communication between your application’s microservices. As more developers work with microservices, service meshes have evolved to make that work easier and more effective by consolidating common management and administrative tasks in a distributed setup. In this session, I will show you how you can set up a Service Mesh with Istio on Kubernetes and run a Micro Services application written in .NET and C#. You will discover how we can utilize the service mesh to have different deployment strategies and way to secure your communication between microservices. You will learn:  
- What a service mesh is  
- How to set this up on Kubernetes  
- How to use the Service Mesh Capabilities like Deployment strategies, chaos engineering and securing your services |
| **T07** | Introduction to ML.NET and AutoML | Intermediate / Advanced | Tuesday, March 3, 9:30 – 10:45am | JAMES MCCAFFREY | Microsoft ML.NET is a code library that enables developers to create sophisticated machine learning prediction models using the C# language. You will learn what types of problems ML.NET can and cannot solve, learn how to install ML.NET, learn how to use AutoML to automatically generate machine learning models, and learn how to interpret ML.NET results. You will learn:  
- What types of problems ML.NET can and cannot solve  
- How to use AutoML to create ML.NET prediction models  
- How to interpret the results of an ML.NET model |
| **T10** | Building Data Pipelines for Modern Data Warehouse with Spark and .NET in Azure | Intermediate / Advanced | Tuesday, March 3, 1:30 – 2:45pm | MICHAEL RYS | Democratizing data empowers customers by enabling more and more users to gain value from data through self-service analytics. Building the data pipelines that process raw data to gain deeper insights is one of the critical tasks. However, the existing open source platforms such as Spark have not provided good .NET support until fairly recently. In this session we will show you how to build data pipelines with Spark and your favorite .NET programming language (C#, F#) using the Azure Spark offerings such as Azure HDInsight and Azure Databricks. You will learn:  
- What .NET Support is available for Spark  
- How to build some simple .NET Spark applications  
- How to use the .NET Spark support in different Spark Engines |
| **T14** | Building a Modern Data Warehouse in Microsoft Azure | Intermediate | Tuesday, March 3, 3:00 – 4:15pm | MICHAEL RYS | Details to come. |
| **TH07** | AI and Analytics with Apache Spark and Azure Databricks | Intermediate | Thursday, March 5, 9:30 – 10:45am | ANDREW BRUST | Open source technology Apache Spark is the analytics and machine learning platform of choice for many companies. While Spark has manifested in numerous parts of the Microsoft stack, including SQL Server 2019, Microsoft’s go–to Spark service is Azure Databricks. |
SESSION DESCRIPTIONS BY TRACK

The service, from Microsoft and Databricks (the company founded by Spark’s creators), is a versatile one, geared towards data lake management, analytics, data engineering and data science. Azure Databricks lets developers work in notebooks, offline, interactively with running clusters, or schedule them as production jobs that provision Spark clusters on-demand.

This session will cover the concepts, service mechanics, and code necessary for you to do analytics and machine learning on Azure Databricks, and integrate it with other Microsoft cloud services and on-premises technologies.

You will learn:
• About the fundamentals of Apache Spark, Spark SQL and Spark MLlib
• How to use Databricks notebooks and manage clusters
• The rigors of integrating Databricks with Azure Storage, Azure SQL Database and Power BI
• How to write Python code for both analytics and machine learning
• Cool new Databricks features, like Delta Lake and MLflow

Deep Dive on Cosmos DB

Part I - Introduction to Cosmos DB

TH15

LEONARD LOBEL
Thursday, March 5, 1:15 – 4:00pm

Part I of this session presents an overview of Azure Cosmos DB, a globally distributed, massively scalable, low (single-digit millisecond) latency, fully managed NoSQL database service that is designed specifically for modern web and mobile applications. Like other NoSQL platforms, Cosmos DB supports a schema-free data model, built-in partitioning for sustained heavy-write ingestion, and replication for high availability. But only Cosmos DB offers turnkey global distribution, automatic indexing, and SLAs for guarantees on 99.99% availability, throughput, latency, and consistency.

We begin by explaining NoSQL databases in general, and how they compare with traditional relational database platforms. Then we tour the many features of Cosmos DB, including its multi-model capabilities which allow you to store and query schema-free JSON documents (using either SQL or MongoDB APIs), graphs (Gremlin API), and key/value entities (Table API). You’ll learn about global distribution, scale-out partitioning, tunable consistency, custom indexing, and more. We’ll also discuss client development using the many available SDKs. Attend this session, and prepare to build Cosmos DB applications today!

You will learn:
• How to use the Cosmos DB server-side programming model
• The latest in Q&A natural language features
• Data management via data lineage and endorsed datasets

TH11

Power BI: What Have You Done For Me Lately?

ANDREW BRUST
Thursday, March 5, 11:00am – 12:15am

Power BI has been a runaway success in adoption and mindshare, rocketing Microsoft past many of its business intelligence competitors. You may already know Power BI creates great looking visualizations, or that it runs on Windows, iOS, Android, and in the cloud. But do you know how to use it? And if you do, is your knowledge current with all the new features of this product that’s updated on a monthly basis?

Come to this session for a combination quick intro to Power BI (including its technology underpinnings, the costs around it and, of course, how to use it) and primer on several newer features, including the decomposition tree visualization, natural language query/authoring and Power BI data management techniques. We’ll even cover features released after this abstract is published.

You will learn:
• Power BI Basics: Reports and dashboards on desktop, cloud and mobile

Deep Dive on Cosmos DB

Part II – Building Cosmos DB Applications

In Part II, you’ll learn how to write applications for Cosmos DB, and see how to work with the various Cosmos DB APIs. These APIs support a variety of data models, including the SQL API (for JSON documents), Table API for (key-value entities), Gremlin API (for graphs) and Cassandra (for columnar).

Regardless what you choose as a data model of choice, you’ll learn how to provision throughput, and how to partition and globally distribute your data to deliver massive scale.

You’ll see how to migrate data from SQL Server to Cosmos DB, and how to write queries using Cosmos DB SQL. Then we’ll write data access code that creates and queries databases, collections, and documents, manages custom indexing policies, and defines users and permissions for resource-level access. We’ll also create, deploy, and execute server-side stored procedures, triggers and user-defined functions, using the Cosmos DB server-side programming model. Attend this session, and prepare to build Cosmos DB applications today!

You will learn:
• How to write code to build Cosmos DB applications
• How to use the Cosmos DB server-side programming model to run stored procedures, triggers, and user-defined functions

THE BEST THING ABOUT VSLIVE! WAS THE APPROACHABILITY OF THE SPEAKERS. NONE OF THE PRESENTERS HAD ANY ISSUE WITH TAKING EXTRA TIME IN/OUT OF SESSIONS TO ANSWER QUESTIONS.”

– Scott Steven, Quick Service Software, Inc.
SESSION DESCRIPTIONS BY TRACK (continued)

DEVELOPING NEW EXPERIENCES
The expectations around “user experience” are being upended right before our eyes. In today’s world, you need to understand not only graphical interactions with keyboard, mouse, touch, and stylus, but also gesture, 3D, mixed-reality, and more. Fortunately, we’ve got you covered with content from phones to PCs to augmented and mixed reality.

This track includes coverage of the following:
• UX Design Fundamentals
• Design an Application User Experience
• Introduction to the Uno Platform
• Cross-platform development with C# and CSLA
• Deep Dive into Web Applications with Blazor
• Moving Desktop Apps to .NET Core 3.0
• Migrating from .NET to .NET Standard/Core
• Modern Desktop Development with .NET Core 3.0

UX Design Fundamentals: What Do Your Users Really See?
Introductory
BILLY HOLLIS
Tuesday, March 3, 8:00 – 9:15am
Developers are often unaware of how their users actually see their screens. In this UX design session, we’ll discuss the most important principles concerning how the human brain and visual system determine how users see interfaces. We’ll look at Gestalt principles for grouping and highlighting, inattentional blindness, and change blindness, how users scan a view, and how to promote clarity in interfaces with levels of emphasis. Tests will help attendees see how they personally experience these principles, and better understand the challenges faced by their users when views and pages are not designed to respect design principles.

You will learn:
• Understand limitations in the human visual system for experiencing computer screens
• Principles to leverage the human visual system for faster and better understanding of interfaces
• Comparisons of real app views done badly and redesigned to be better

WebAssembly, Containers, and CSLA .NET
Intermediate
ROCKFORD LHOTKA
Wednesday, March 4, 1:30 – 1:50pm
The future of .NET is .NET Core and .NET Standard. Learn a low-risk, high-productivity technique to migrate code to .NET Standard and .NET Core, while continuing to support your .NET Framework applications.

You will learn:
• What WebAssembly is
• About Blazor in action
• Insight into the features Blazor provides

Fast Focus: Migrate Your C# Code from .NET Framework to .NET Standard
Intermediate
ROCKFORD LHOTKA
Wednesday, March 4, 8:00 – 10:45am
The Uno Platform in a new entry in the multi-platform space. It brings the same markup (UWP XAML) and the same code platform (C#) to all the platforms it supports. It allows a single UI view to target iOS, Android, Windows, and the browser, running natively on each. This session will cover basic capabilities, compare Uno Platform to Xamarin and Google Flutter, show examples of advanced XAML markup running on multiple platforms, and suggest a roadmap to get started if you have a good candidate project.

You will learn:
• How the Uno Platform fits into the expanding set of products for multi-platform development
• About the Uno Platform in action, with XAML views that can run on multiple platforms
• How to get started with the Uno Platform for basic native mobile apps

Run Your Business Logic Everywhere with WebAssembly, Containers, and CSLA .NET
Intermediate
ROCKFORD LHOTKA
Wednesday, March 4, 2:30 – 3:45pm
You may write your smart client app in UWP, Xamarin, WPF, or even Windows Forms. In any case, your app probably calls back-end services and needs to interact with app servers. Some or all of your business logic may run on the client, the app server, or both. That’s ideal for the balance between user interactivity, performance, scalability, and security. The widely-used open source CSLA .NET framework helps you create a reusable, scalable, and cross-platform portable business layer that lets your application run on multiple types of client devices while sharing business logic between the clients and your app server. This session is an end-to-end walkthrough of how this works and how you can benefit.

You will learn:
• How CSLA .NET helps you develop maintainable, reusable, cross-platform business logic
• How to leverage your business logic in WebAssembly (via Blazor and Uno)
• How to leverage your business logic on the server via Docker and Kubernetes
SESSION DESCRIPTIONS BY TRACK (continued)

W20
Moving Desktop Apps to .NET Core 3.0
Intermediate
TIM COREY
Wednesday, March 4, 4:00 – 5:15pm
Modernizing your legacy desktop applications doesn’t require a total rewrite. Transitioning your applications over to .NET Core 3.0 can be done with minimal effort on your part. This session, we will discuss best practices, pitfalls to avoid, and lessons learned.

You will learn:
• The benefits of upgrading to .NET Core
• The steps to upgrade to .NET Core
• The pitfalls to avoid and best practices to follow in an upgrade

DELIVERY AND DEPLOYMENT
Every developer knows that there’s more to software development than just code and tooling. The practices and techniques we use to understand and analyze the problem space, to manage interpersonal communication and conflict, and other patterns and practices, are key to success. Modern software teams understand that people are the difference and building better teams means building better solutions.

Topics in this track include:
• Creating interactive code documentation with Try.NET
• Microsoft Power Platform for RAD and automated workflows
• Organizing Community events
• Use Planning Poker to Slay Estimates
• Working Remotely in the Digital Age
• How to talk like an engineer

TH02
Microsoft Power Platform, RAD Done Right: Building Automated Workflows with Microsoft
Introductory
WALT RITSCHER
Thursday, March 5, 8:00 – 9:15am
Here’s a familiar scenario. To deal with non-stop email inflow, many of us create rules that manage our inbox. We’ve got rules that prioritize, categorize, forward, move and delete. But attempt to add even simple logic tests in the rules and you run into a wall. Taking the big tool approach, you can create an Outlook Addin and use the full power of C# to tackle the problem. But not every programming job or workflow needs a high-powered toolset like C# or Visual Studio. For quick one-offs and simple tasks, you can fall back to more basic tools. With the cloud-based Microsoft Flow, you can quickly and easily build custom automations from your desktop, laptop, or mobile device without needing to write a single line of code. Read the marketing claims, Microsoft states that Flow is a tool for end-users. However, for those of us who code, Microsoft Flow provides a quick way to create personalized automated workflows between applications. Don’t be too quick to judge, behind the scenes Flow is built on top of Azure Logic Apps. Flow has an impressive list of service providers: like SharePoint, Dynamics 365, Teams, Yammer, Dropbox, Outlook, OneDrive and MailChimp. This session shows how to get started with flow and build interesting integrations with little or no code.

You will learn:
• About building flows for common business scenarios
• To explore the extensive collection of Flow Connectors
• To look at approval and button flows

TH03
Modern Desktop Development with .NET Core 3.0
Advanced
TIM COREY
Thursday, March 5, 8:00 – 9:15am
.NET Core is faster, more powerful, and easier to use than the .NET Framework. So how do you take advantage of this power in modern desktop applications? In this session, we will build a cutting-edge .NET Core 3.0 WPF application that takes advantage of the new features and options of WPF. Things like integrated Azure Key Vault for production versions, built-in dependency injection that can be upgraded, and single-file deployment with .NET Core bundled as part of your application.

Harness the power of modern desktop development with .NET Core to make your applications faster, more powerful, and easier to develop and maintain.

You will learn:
• About the improvements to WPF in .NET Core 3.0 and beyond
• How to create a powerful WPF application backed by .NET Core
• How to deploy a .NET Core WPF application easily

W11
Fast Focus: Create Interactive Code Documentation with Try.NET
Introductory
WALT RITSCHER
Wednesday, March 4, 2:00 – 2:20pm
Do you wish you could give your readers a more hands-on experience with .NET as they peruse your documentation on the web? With Try.NET, an embeddable code runner from Microsoft, you can. Using this tool, you can bring the concepts in your articles to life by allowing your readers to try out .NET code in the browser. In this session, learn how to get up and running with Try.NET. You’ll get your first look at this powerful tool, see how to add sample code and create Markdown to create interactive code examples for .NET documentation.

You will learn:
• How to configure .NET Core for Try.NET project
• How to build code examples
• How to embed the code examples in the Markdown documents
SESShON DESCRIPTIONS BY TRACK (continued)

TH06
The Definitive Guide to Organizing Community Events
Everyone
JENNIFER WADELLA
Thursday, March 5, 9:30 – 10:45am
Community organizing is no small feat and is VITAL to sustaining a technical workforce of learning, growth, and diversity. Since its foundation in 2013, Kansas City Women in Technology has grown to a volunteer team of more than 60 leaders running 6 technical/coding programs and several events per month serving multiple demographics and hundreds of attendees. In this session you will learn strategies on how to recruit for, build, and manage volunteer leadership teams, create + scale workshops and meetups that delight attendees, and track performance data to impress and engage future sponsors.

You will learn:
• The importance and role of developer communities
• How to start and run a developer community without having to quit your full-time job as an engineer
• How to create great events and scale a high-functioning volunteer team

TH10
Get Your Poker Face On: How to Use Planning Poker to Slay Project Estimations
Introductory
LAURA B. JANUSEK
Thursday, March 5, 11:00am – 12:15pm
This session will explore how to use Planning Poker — the Agile, consensus-based estimation technique — to generate data-informed project estimations for your product roadmap. Attendees will gain insight into the process with real-world examples and tips from an experienced project manager and product owner. They will learn how to use Planning Poker for a range of project types and team structures, how to leverage free online tools like a project-planning pro, and how to make the estimation process feel less like a chore and more like a game!

You will learn:
• About data-informed project timelines for their product roadmap or other projects
• How to facilitate Planning Poker sessions with a range of team sizes and project types
• How to Integrate free online technology tools into the Planning Poker experience for easier data collection

TH14
Offices are Over: How & Why to Work Remotely in the Digital Age
Everyone
LAURA B. JANUSEK
Thursday, March 5, 1:15 – 2:30pm
The remote working trend is becoming more and more popular, whether it’s a weekly work-from-home day or an overall company structure. The majority (67%) of remote work programs are offered at manager’s discretion, so it could be right around the corner. And if you’re a manager, it could be up to you!

You will learn:
• How to leverage statistics to negotiate a remote team structure with management
• To use a range of strategies to engage with remote team members
• To incorporate tech tools into daily workflow for easy collaboration with remote team members

TH18
How to Talk Like an Engineer
Introductory / Intermediate
LAURIE BARTH
Thursday, March 5, 2:45 – 4:00pm
It is often said that the hardest problem to solve is when two people are talking about different things but believe they are talking about the same thing. As you grow in your engineering career being able communicate about problems effectively is perhaps your single most important skill. This talk exists to distill the breadth of engineering verticals into a quick hit of common vocabulary.

You will learn:
• About communication blindspots
• About common types of vocabulary that trip people up
• Ways to improve team communication and understanding

.NET CORE AND MORE
At the heart of the Microsoft development experience is the .NET Framework. But these days there’s so much more than just that original framework. You also need to understand .NET Standard and .NET Core, not to mention the cool features added to C#, Roslyn and Visual Studio. These are the base-level tools you need to know for success in the Microsoft development world.

Topics in this track include:
• Tour of Visual Studio 2019
• Visual Studio Code for the Cloud Developers
• Business Apps with Client-side Blazor
• Building Custom Snippets
• Lamdas and LINQ
• Parallel Programming in C#

T04
Visual Studio Code for the Cloud Developer
Intermediate
CHIRS NORING
Tuesday, March 3, 8:00 – 9:15am
Visual Studio Code has rapidly become the code editor of choice for millions of developers worldwide. Code is more than just an editor, however. With the right extensions, it is a full suite of tools that enable a full development lifecycle from creating and building code to deploying and scaling and even managing cloud-based assets without leaving the editor. This session will demonstrate several extensions that enable developers to build, debug, inspect, maintain, deploy, and troubleshoot code and data that ultimately lives in the cloud.

You will learn:
• How to use Visual Studio Code to develop, test, deploy, and maintain cloud apps
• About Visual Studio Code extensions that connect to cloud-based assets like apps, serverless functions, and databases
SESSION DESCRIPTIONS BY TRACK (continued)

**T12**

**Creating Business Applications Using Blazor (Razor Components)**

*Introductory*

MICHAEL WASHINGTON

Tuesday, March 3, 1:30 – 2:45pm

Blazor allows you to create high performance, visually rich business applications. This speeds your development lifecycle, allows you to re-use your existing business logic and custom libraries, and provides a superior debugging experience. To your end-users the applications will look and perform like any modern SPA (Single Page Application), yet you will be able to code it entirely in C#, only implementing custom JavaScript interaction when you desire it.

You will learn:
- How to create Blazor applications
- About creating custom components
- About Security and deployment

**W10**

**Fast Focus: Onboard New Developers Faster with Custom Snippets!**

*Introductory*

JENNIFER WADELLA

Wednesday, March 4, 1:30 – 1:50pm

Onboarding developers to new projects can be a time-consuming process, especially if there’s not dedicated documentation explaining the ins & outs of your codebase or the brilliant design system your team created. You can help ease this process by creating code snippets of your project’s custom components for new team members to use! Learn how to build and share custom snippets in VS Code, Sublime, and Atom and spend less time with onboarding woes!

You will learn:
- How to create Blazor applications
- About creating custom components
- About Security and deployment

**TH09**

**Learn to Love Lamdas (and LINQ, Too!)**

*Introductory / Intermediate*

JEREMY CLARK

Thursday, March 5, 11:00am – 12:15pm

Lambda expressions in C# can be confusing the first time you walk up to them. But once you get to know them, you’ll see that they are a great addition to your toolbox. Used properly, they can add elegance and simplicity to your code. And some .NET constructs (such as LINQ) lend themselves to lambda expressions. In addition, lambdas let us scope our variables more appropriately with captured variables. We’ll take a look at how lambda expressions work and see them in action. We’ll also see how LINQ can help us move from imperative programming to declarative programming (a gateway to functional-style programming).

You will learn:
- The indecipherable syntax of lambda expressions
- How captured variables let us break typical scope boundaries
- About LINQ method signatures to use them effectively

**TH13**

**Run Faster: Parallel Programming in C#**

*Introductory*

JEREMY CLARK

Thursday, March 5, 1:15 – 2:30pm

Want to see code run 6 times faster? Join me as we use parallel programming to make full use of our multi-core systems. We’ll use techniques such as the .NET Parallel, ForEach, and we’ll also spin up Tasks manually to take more control over the process. Along the way, we’ll see how to write code that is easy to run in parallel (warning: it may start you down the path of functional programming). Use the hardware you have to run faster.

You will learn:
- About preparing code to run in parallel
- About using Parallel.For for independent processes
- About spinning up Tasks for more control over parallel processing

**FULL STACK WEB DEVELOPMENT**

Web development has become the dominant approach for building enterprise software. To provide your best on every project, you need to understand the server and browser client worlds. On the server, there’s ASP.NET Core with MVC, the new Razor Pages, and support for building services. The browser client is evolving rapidly, with constant changes and updates to JavaScript, TypeScript, Angular, React, and other related frameworks. But more than this, there’s now WebAssembly and the ability to run other languages natively in the browser, including C/C++, C#, and many more. Your need to keep up-to-date with all these technologies has never been greater, and we’re here to give you the knowledge you need!

Topics in this track include:
- Modern Security with ASP.NET Core 3
- ASP.NET Core 3 Web and Web Service Development
- Angular Best Practices
- Security APIs with ASP.NET Core 3
- OpenID Connect and OAuth 2.0 using Azure B2C
- JavaScript for C# developers
- AngularJS in a Modern TypeScript World
- Busy developer’s guide to Flutter
- Human readable JavaScript
- Redux
- Multithread web and workers
### Angular Best Practices

**T01**

**Angular Best Practices**

**Introductory / Intermediate**

**DEBORAH KURATA**

Tuesday, March 3, 8:00 – 9:15am

This session covers best practices for building clean and maintainable Angular applications. We cover organizing your components into modules, building and registering services, routing best practices, and getting the most from TypeScript. We will examine common Angular patterns, such as smart vs presentational components, Redux (NgRx), and declarative development with RxJS.

**You will learn:**
- Best practices for organizing your Angular application
- Patterns for state management
- How to build better components, templates, and services

### RxJS in Angular Best Practices

**T05**

**RxJS in Angular Best Practices**

**Introductory / Intermediate**

**DEBORAH KURATA**

Tuesday, March 3, 9:30 – 10:45am

This session covers best practices when using the Reactive Extensions for JavaScript (RxJS) for managing data in your Angular applications.

We cover retrieving and displaying asynchronous data, exception handling, combining multiple data sets, preventing nested subscriptions, and creating action streams.

**You will learn:**
- Best practices for collecting, combining and caching async data
- Exception handling
- How to build action streams to effectively react to user actions or state changes

### Securing APIs with ASP.NET Core 3, Visual Studio 2019, and IdentityServer4

**T09**

**Securing APIs with ASP.NET Core 3, Visual Studio 2019, and IdentityServer4**

**Intermediate**

**BROCK ALLEN**

Tuesday, March 3, 1:30 – 2:45pm

ASP.NET Core is a great platform for building web APIs, but there hasn’t been an out of the box approach to securing those APIs. At least not until now with ASP.NET Core 3.0. This session will show how the templates in Visual Studio 2019 now use OAuth 2.0 and OpenID Connect, implemented by the popular open source IdentityServer4 framework, to enable token-based security to protect APIs.

**You will learn:**
- About API Security
- About OAuth 2.0
- About IdentityServer

### An Introduction to OpenID Connect and OAuth 2.0 using Azure B2C

**T13**

**An Introduction to OpenID Connect and OAuth 2.0 using Azure B2C**

**Intermediate**

**BROCK ALLEN**

Tuesday, March 3, 3:00 – 4:15pm

Centralized single sign-on and secure access to Web APIs are common requirements these days for application architectures. The modern protocols for these requirements are OpenID Connect and OAuth 2.0. Microsoft provides a turn-key consumer-focused user management system in its Azure B2C product. This session will provide an introduction to the OpenID Connect protocol and OAuth 2.0 using Azure B2C as the provider. You will leave knowing how to log a user into your application with OpenID Connect, and securely invoke an API with OAuth 2.0 using Azure B2C.

**You will learn:**
- About Single Sign-on with OpenID Connect
- About OAuth 2.0
- About Azure B2C

### Getting Started with ASP.NET Core 3.X

**W01**

**Getting Started with ASP.NET Core 3.X**

**Intermediate**

**PHILIP JAPIKSE**

Wednesday, March 4, 8:00 – 9:15am

In this session I show you how ASP.NET Core implements the Model View Controller pattern for Web Applications and the Model Controller pattern for Restful services. I cover convention over configuration, implementing Controllers and Action methods, Views (including partial views and layouts), Routing, and much more.

**You will learn:**
- .NET Core foundations
- ASP.NET Core MVC Implementation
- ASP.NET API Implementation

### JavaScript for the C# (and Java) Developer

**W05**

**JavaScript for the C# (and Java) Developer**

**Intermediate**

**PHILIP JAPIKSE**

Wednesday, March 4, 9:30 – 10:45am

Yes, it has curly braces. Yes, it has semi colons. And you can write C# like code in JavaScript. But should you? JavaScript programming has many paradigms that make it very different than writing typical managed code. In this session I show you, the C# programmer, what you need to know to take your JavaScript to the next level.

**You will learn:**
- Core features in JavaScript
- The important differences between JavaScript and C#
- Common pitfalls for those new to JavaScript

### Fast Focus: Getting Started with ASP.NET Core Razor Pages

**W08**

**Fast Focus: Getting Started with ASP.NET Core Razor Pages**

**Introductory**

**WALT RITSCHER**

Wednesday, March 4, 1:30 – 1:50pm

Razor Pages are a new feature of ASP.NET Core 2.0 that brings a simple page-based development model to .NET Core. While they are similar to Razor Views in MVC, they have interesting...
SESSION DESCRIPTIONS BY TRACK (continued)

**W18**
**Busy Developer’s Guide to Flutter**  
Intermediate  
Ted Neward  
Wednesday, March 4, 4:00 – 5:15pm  
Flutter is a new cross-mobile framework and platform (using a custom language, Dart, that started out as a Javascript-transpiling target before it was adopted by Flutter) from Google that looks to solve some of the classic problems—such as state management and component reuse—that the native mobile languages/platforms don’t really solve. In this session, we’ll take a pass-through Dart, see how Flutter works, and discuss where this fits in the world next to Xamarin, Javascript-based toolkits like Cordova, and native Swift/iOS or Kotlin/Android.

**You will learn:**  
- How to pick-up the basics of Flutter and Dart  
- How Flutter interacts with mobile devices  
- Some of the power of Flutter’s approach to UI

**TH05**
**The Multithreaded Web: A Tale of Workers**  
Introductory / Intermediate  
RAMÓN GUIJARRO  
Thursday, March 5, 9:30 – 10:45am  
With the recent advent of Progressive Web Apps, Service Workers are becoming more well-known and widespread. However, there doesn’t seem to be much talk around Web Workers in general anymore, and some might not even know about them yet. This talk combinedly explores the different ways browsers give us to run scripts in background threads, what we can do with them, and their differences and similarities.

**You will learn:**  
- Motivation for multithreading on the web  
- Types of workers and differences between them  
- API and possibilities overview (closing the gap with native apps)

**W14**
**Supporting an Old-Fashioned AngularJS App in a Modern TypeScript World**  
Intermediate  
JENNIFER WADELLA  
Wednesday, March 4, 2:30 – 3:45pm  
You don’t want to say this out loud at parties, but you’re still supporting a legacy AngularJS app and are struggling to stay current with modern techniques. We’ve all been there and it’s going to be ok! In this talk you’ll learn how to take advantage of TypeScript and reactive programming with RxJS, but in the context of an AngularJS application ‘cause AngularJS devs need love too!

**You will learn:**  
- How developers supporting AngularJS apps can modern practices like using TypeScript  
- How developers supporting AngularJS apps can use web components to build new features without being constrained to just AngularJS  
- Introduce developers supporting AngularJS to reactive programming & how to use RxJS in current apps

**TH17**
**Redux is Dead, Long Live Redux!**  
Intermediate / Advanced  
RAMÓN GUIJARRO  
Thursday, March 5, 2:45 – 4:00pm  
Redux is arguably the de-facto standard for global state management in the React ecosystem. Yet despite its huge popularity, it’s often accused of being too cumbersome, requiring developers to write a lot of boilerplate code and constantly switch between many files. Tools like Redux Starter Kit aim to improve the situation, but some people still feel Redux is too much for their projects. However, rolling our own state manager is out of the question. Or is it? In this talk we’ll see how to take advantage of the new useReducer hook and the official Context API to build custom Redux-like solutions, so we can simplify it in whatever ways we want or take different approaches that better suit our project. The experience will actually help us understand Redux better and appreciate the good things about it.

**You will learn:**  
- About problems with Redux and current solutions  
- Approaches to custom implementations  
- What we lose without Redux

**TH01**
Intermediate  
LAURIE BARTH  
Thursday, March 5, 8:00 – 9:15am  
Love JavaScript? Awesome! Hate JavaScript? That’s ok! We know that JavaScript hasn’t been very easy to read in the past, lots of dollar signs and slick one-liners. The good news is that things have gotten better! In this talk we’ll look at some of the syntax ES2015+ introduced to help us write more readable code for our coworkers and our future selves.

**You will learn:**  
- What makes code readable  
- Explore ES2015+ syntax  
- Prime use cases for these concepts
SESSION DESCRIPTIONS BY TRACK (continued)

VIRTUAL TRACK KEY

- Microsoft Sessions
In developer technology, just like anything else, sometimes you have to go straight to the source. Getting authoritative information, from folks on the teams at Microsoft building the products and services, is a great opportunity. Delivering that direct-from-the-team content to you is something we take very seriously at Visual Studio Live! - that’s why we book Microsoft speakers at every one of our events. Sound good to you? Then look for sessions in the Microsoft track, grab a good seat, and get ready for content from the people who are building the technology itself.

- Foundational Sessions
Tech is always changing, but an event that focuses only on the new stuff does its audience a disservice. Some concepts and technologies are both timeless and critically important, forming the very foundation of software development, and coverage of them is indispensable. Whether it’s language skills, core understanding of operating systems, Web development basics or even the fundamentals of .NET, some skills remain consistently important, even if they’re not new and shiny. The Foundational Sessions track at Visual Studio Live! is where you’ll find this vital core content - so look for these sessions and add them to your must-attend list.

“VSLIVE! WAS AN AMAZING OPPORTUNITY TO GROW, LEARN AND NETWORK. I’LL BE HEADING HOME WITH RENEWED PASSION READY TO USE ALL THE GREAT THINGS I’VE LEARNED HERE.”

– Kevin Cox, ETM
CONFERENCE ADVISORY BOARD

Andrew Brust  
CEO and Founder,  
Blue Badge Insights  
Visual Studio Live! Conference Co-Chair  
Andrew Brust is the founder and CEO of Blue Badge Insights. He advises data and analytics ISVs on winning in the market, solution providers on their service offerings, and customers on their analytics strategy. He writes about Big Data for ZDNet and co-chairs the Visual Studio Live! series of developer conferences. Andrew is an entrepreneur, a consulting veteran, a former analyst and research director, and a current Microsoft Regional Director and MVP. @andrewbrust

Angela Dugan  
Director, Polaris Solutions  
Angela Dugan is a Director for the Chicago Office of Polaris Solutions. Angela has been in the software industry since 1999, is an active tech community contributor, and organizes a number of local meetups and conferences including IAMCP Women in Tech, Chicago Code Camp, ThatConference, and St. Louis DevUp. She is a Microsoft ALM MVP, a Certified Scrum master, and a SAFe Program Consultant. Angela is an avid board gamer, an accidental CrossFit junkie, an aspiring crafty diva, and a Twitter addict. She is constantly working on her 100+ year old house in Oak Park with her husband David, where they raise two ornery chickens Betsy and Gertrude and a rambunctious GSP named Sadie. @OakParkGirl

Rockford Lhotka  
CTO, Magenic  
Visual Studio Live! Conference Co-Chair  
Rockford Lhotka is the CTO of Magenic, and the creator of the widely used CSLA .NET development framework. He is the author of numerous books on software development and regularly speaks at major conferences around the world. Rockford is a Microsoft Regional Director and MVP. His company Magenic (magenic.com) specializes in planning, designing, building, and maintaining an enterprise’s most mission critical systems. For more information, go to lhokta.net. @RockyLhotka

David Ramel  
Editor in Chief, Visual Studio Magazine and ADTMag.com  
Visual Studio Live! Conference Co-Chair  
David Ramel is editor in chief of Visual Studio Magazine and Application Development Trends Magazine. He is an editor, writer and Web multimedia producer with 20 years of experience in mainstream journalism and within the information technology trade industry.

Brian Randell  
Partner, MCW Technologies  
Visual Studio Live! Conference Co-Chair  
Brian A. Randell is a partner with MCW Technologies, LLC. For more than 20 years, he has been building software solutions. He educates teams on Microsoft technologies via writing and training—both in-person and on demand. He’s also a consultant for worldwide companies of all sizes including Fortune 100 companies like Microsoft. Brian is a passionate software craftsman who still enjoys coding as he helps teams to improve their processes from idea to shipping to production management and monitoring. He’s currently a Visual Studio MVP and co-author of “Professional Application Lifecycle Management with Visual Studio 2013” from Wrox Publishing. When he’s not working, Brian enjoys spending time with his wife and two children. @brianrandell
SPEAKERS

Brock Allen
Application Security Architect, Solliance
Brock Allen is an application security consultant for Solliance. He has 20 years of industry experience, and specializes in .NET, web development, and web-based security. Brock is the co-author of many security related open source frameworks including IdentityServer, IdentityManager, and Membership-Reboot. He also frequently posts to the ASP.NET forums, he is an MVP for ASP.NET/IIS, a member of ASPInsiders, and a contributor to the ASP.NET platform. @BrockLAllen

Laurie Barth
Software Engineer, Ten Mile Square
Laurie is a software developer, conference speaker and frequent blogger. During normal business hours she is a consultant at Ten Mile Square. Depending on the day she can be found using any number of technologies from different languages to frameworks and other support tools. When she isn’t writing code, you can find her playing board games and eating cupcakes.

Jason Bock
Practice Lead, Magenic
Jason Bock is a practice lead for Magenic (http://www.magenic.com) and a Microsoft MVP (C#). He has more than 20 years of experience working on a number of business applications using a diverse set of frameworks and languages such as C#, .NET, and JavaScript. He is the author of "NET Development Using the Compiler API," "Metaprogramming in .NET," and "Applied .NET Attributes." He has written numerous articles on software development issues and presented at a number of conferences and user groups. He is a leader of the Twin Cities Code Camp (http://www.twincitiescodecamp.com). Jason holds a Master’s degree in Electrical Engineering from Marquette University. Visit his web site at http://www.jasonbock.net. @jasonbock

Eric D. Boyd
Founder & CEO, responsiveX
Eric D. Boyd is the founder and CEO of responsiveX, a Microsoft Azure MVP, a Microsoft Regional Director, a regular conference speaker, and the co-author of "Step-by-Step Azure SQL Database" from Microsoft Press. He is so passionate about cloud, mobile, and modern applications that he founded responsiveX (www.responsiveX.com), a technology company that helps customers deliver great web, mobile, and enterprise apps using the cloud and Azure. Eric launched his technology career almost two decades ago with a web development startup and has served in multiple roles since including developer, consultant, technology executive, and business owner. You can find Eric blogging at http://www.EricDBoyd.com and on Twitter at http://twitter.com/EricDBoyd.

Andrew Brust
CEO and Founder, Blue Badge Insights
Andrew Brust is the founder and CEO of Blue Badge Insights. He advises data and analytics ISVs on winning in the market, solution providers on their service offerings, and customers on their analytics strategy. He writes about Big Data for ZDNet and co-chairs the Visual Studio Live! series of developer conferences. Andrew is an entrepreneur, a consulting veteran, a former analyst and research director, and a current Microsoft Regional Director and MVP. @andrewbrust

Jeremy Clark
Developer Betterer
Jeremy Clark makes developers better. By drawing on over 15 years of experience in application development, he helps developers take a step up in their skill set with a focus on making complex topics approachable regardless of skill level. He is a Microsoft MVP for .NET, and he has authored seven courses for Pluralsight, including "C# Interfaces," a course aimed at giving developers a clear understanding of abstraction. He loves speaking and has delivered over 300 technical presentations in the last 9 years in the United States and Europe. Jeremy lives in northern Washington with his lovely wife, 2 cats, 2 dogs, and a banjo.

Tim Corey
Software Development Trainer
Tim is a software developer, consultant, trainer, and Microsoft MVP. He runs a YouTube channel dedicated to making the process of learning software development easier. The primary focus of the channel is C#, but SQL, Azure, DevOps, and more have been known to sneak in as well. You can find him at www.IAmTimCorey.com, YouTube.com/IAmTimCorey, or @IAmTimCorey on Twitter.

Marcel de Vries
CTO, Xpirit
Marcel is the co-founder and CTO of Xpirit, a high-end consulting firm based in Hilversum, Netherlands. Marcel co-founded Xpirit in 2014 as a spin off from Xebia, which is also in the Netherlands. Together with Xebia, they help customers with digital transformation, agile consulting, and full stack development with both Microsoft and open source products. Marcel spends most of his time looking at how new emerging technologies, a shift in mindset, and a new way of work can help organizations get software in production faster. Helping organizations transform towards a high speed, innovative, and productive organization has become his passion. Marcel loves to learn new technologies and teach others what he has learned. Besides his work as CTO, he also works as a consultant in the field of application lifecycle management (ALM), continuous delivery. DevOps, cloud/web scale application architectures, and cross-platform enterprise mobile app development with Xamarin. Marcel is a frequent speaker at leading industry conferences. He has delivered sessions at events like Microsoft /Build, Microsoft TechDays, Visual Studio Live!, Xebicon, and Techorama to name a few. He hosts several meetups in his region on Microsoft Azure, Xamarin, and ALM. In his spare time, he builds online...
SPEAKERS (continued)

Heather Downing  
Coder. Entrepreneur. Passionate for the impossible

Heather is a passionate coder and entrepreneur. She has experience working with Fortune 500 companies building enterprise level mobile and .Net applications. She spends her spare time at tech conferences supporting the growth of new developers of all genders, ages and backgrounds. When not coding, Heather spends her time as a competitive equestrian and learning the art of mounted archery.

Mickey Gousset  
DevOps Architect, Microsoft

Mickey Gousset is a DevOps Architect at Microsoft. He was formerly a Microsoft Visual Studio and Development Technologies MVP (for 13 years). Mickey has been lead author of several books, including “Professional Application Lifecycle Management with Visual Studio 2013” from Wrox Publishing. He is very passionate about DevOps and the cloud, and speaks on DevOps and Cloud topics at various user groups, code camps, and conferences around the world. Learn more about Mickey at http://mickeygousset.com, @mickey_gousset

Ramón Guijarro  
Web Engineer

Ramón is a creative web developer with an interest in design, communication and data. He’s a JavaScript and React enthusiast who likes to share the little he knows as much as he can. He also likes to find out about unexpected uses for the web. Making up silly personal needs in order to solve them with equally silly code projects is another of his questionable virtues.

Billy Hollis  
XAML slinger

Billy Hollis is a software designer and developer with a contrarian streak that often challenges conventional wisdom in the industry. He has a consulting practice in Nashville, Tennessee. He and his team focus on user experience design (UX), advanced user interface development, rules-based architectures, and healthcare systems. He teaches design classes for UX and technical classes on XAML for the Universal Windows Platform and XAML for WPF. @billyhollis

Laura B. Janusek  
Chief Product Officer, Modern Teacher

As a founding team member at Modern Teacher, Laura has held several roles. She’s currently the Chief Product Officer, focusing on the design and development of the company’s software solutions. In collaboration with the CEO, she defines Modern Teacher’s current and upcoming product offerings and uses client feedback to oversee the development lifecycle, from ideation through live releases and enhancements. Laura leads the development and quality assurance teams, which have included both U.S.-based and nearshore developers. She has also managed Modern Teacher’s professional learning content creation team, including graphic and e-learning designers. Laura also acted as VP of Curriculum and VP of Client Experience with digedu. The Digital Education Company, leading a team of over 40 digital content creators and overseeing client relationships nationally. Prior to her work in EdTech, Laura was involved with a variety of educational organizations, teaching in both Special Education and English departments as well as nontraditional learning environments. Laura enjoys practicing yoga, playing violin, and listening to audiobooks. She is an active member of communities for women in technology, she has recently been recognized in a series on “Women on Top in Tech”, and she is passionate about education equity and technology’s ability to improve lives in the education space and beyond.

Philip Japikse  
Developer, Coach, Author, Teacher

An international speaker, Microsoft MVP, ASPInsider, MCSD, CSM, and CSP and a passionate member of the developer community, Phil Japikse has been working with .NET since the first betas. He has been developing software for more than 30 years and has been heavily involved in the agile community since 2005. Phil is co-author of the best-selling "C# and the .NET 4.6 Framework" (http://bit.ly/pro_csharp), the lead director for the Cincinnati .NET User’s Group (http://www.cinnug.org) and Cincinnati Software Architect Group, co-hosts the Hallway Conversations podcast (http://www.hallwayconversations.com), founded the Cincinnati Day of Agile (http://www.dayofagile.org), and volunteers for the National Ski Patrol. Phil is also a published author with LinkedIn Learning. During the day, Phil works as an enterprise consultant and agile coach for large to medium firms throughout the U.S. Phil enjoys to learn new technology and is always striving to improve his craft. Follow Phil on twitter via http://www.twitter.com/skimedic and read his blog at http://www.skimedic.com/blog, #skimedic

Deborah Kurata  
Microsoft MVP and Google Developer Expert

Deborah Kurata is a software developer, speaker and Pluralsight author with a focus on Angular and C#. For her work in support of software development and software developers, she has been recognized with the Microsoft Most Valuable Professional (MVP) award and is a Google Developer Expert (GDE). Follow her on twitter: @deborahkurata

Rockford Lhotka  
CTO, Magenic

Rockford Lhotka is the CTO of Magenic, and the creator of the widely used CSLA .NET development framework. He is the author of numerous books on software development and regularly speaks at major conferences around the world. Rockford is a Microsoft Regional Director and MVP. His company Magenic (magenic.com) specializes in planning, designing,
Leonard Lobel
CTO, Sleek Technologies, Inc.

Leonard Lobel is the chief technology officer and co-founder of Sleek Technologies, a New York-based development shop with an early adopter philosophy toward new technologies. He is also a principal consultant at Tallan, a Microsoft National Systems Integrator and Gold Competency Partner. He is also a Microsoft MVP, Data Platform. Programming since 1979, Lenni specializes in Microsoft-based solutions, with experience that spans a variety of business domains, including publishing, financial, wholesale/retail, health care, and e-commerce. Lenni has served as chief architect and lead developer for various organizations, ranging from small shops to high-profile clients. He is also a consultant, trainer, and frequent speaker at local usergroup meetings, VSLive!, Live! 360, SQL PASS, and other industry conferences. Lenni has also authored several MS Press books and Pluralsight courses on SQL Server programming.

James McCaffrey
Research Software Engineer, Microsoft Research, Microsoft

James McCaffrey works for Microsoft Research in Redmond, WA. James has a PhD from the University of Southern California, an MS in computer science, a BA in cognitive psychology, and a BA in mathematics. James has worked on several key Microsoft products, including Internet Explorer and Bing, and is the senior contributing editor for Microsoft’s MSDN Magazine. James learned to speak to the public when he worked at Disneyland during college, and he can still recite the entire Jungle Cruise ride narration from memory.

Ted Neward
Director of Platform Strategy, Quicken Loans

Ted is a Director of Platform Strategy for Quicken Loans, where he directs and defines next-generation platform strategy for the company. Prior to this, he was (and remains) the Principal at Neward & Associates, LLC, where he advised companies looking to figure out the intersection of people, process and technology. He’s been at every level in the organizational tree—from software engineer up through architect, Director, and CTO—for companies ranging from sweat-equity startups to IPO-success startups to companies who’ve been public for decades. He’s written dozens of books and hundreds of articles on Java, .NET, JavaScript, iOS and Android, including a monthly back-page editorial in CODE Magazine. He lives in the Pacific Northwest with his wife, sons, three cats, seven smartphones, eight tablets, five laptops, and a serious electric bill. Reach him on Twitter as @tedneward.

Oren Novotny
Chief Architect, DevOps & Modern Software, Insight

Oren is Chief Architect, DevOps & Modern Software at Insight, and a Microsoft Regional Director. He is passionate about reducing friction in the development process and creating modern software solutions to solve complex business challenges. Named a Microsoft MVP for Windows Platform Development in 2014, Microsoft MVP for Visual Studio and Development Technologies in 2016, Xamarin MVP in 2016, and member of the .NET Foundation Advisory Council in 2017, he has been writing code on the Microsoft platform since the days a 2400 baud modem was considered cutting-edge. His prior experience ranges from building identity solutions for global organizations, developing real-time trading systems dealing with massive amounts of data to the complex data models of equity derivatives and the regulatory needs of Medicaid claims processing. He believes that technology is meaningless in a vacuum and strives to show how the bleeding-edge delivers superior value to the clients’ bottom line.

Chris Noring
Senior Cloud Developer Advocate, Microsoft

Chris is Senior Cloud Developer Advocate with Microsoft and published author of several books: [https://www.packtpub.com/gb/authors/christoffer-noring](https://www.packtpub.com/gb/authors/christoffer-noring). Additionally, he holds an MVP title from Google called Google Developer Expert in Web technologies and Angular. He is also an avid blogger at softchris.github.io and dev.to/softchris, where he covers topics like JavaScript, .Net, Serverless and DevOps topics like Docker and Kubernetes. Chris has spoken at >100 events across the Globe and is occasionally a keynote speaker.

Brian Randell
Partner, MCW Technologies

Brian A. Randell is a partner with MCW Technologies, LLC. For more than 20 years, he has been building software solutions. He educates teams on Microsoft technologies via writing and training—both in-person and on demand. He’s also a consultant for worldwide companies of all sizes including Fortune 100 companies like Microsoft. Brian is a passionate software craftsman who still enjoys coding as he helps teams to improve their processes from idea to shipping to production management and monitoring. He’s currently a Visual Studio MVP and co-author of “Professional Application Lifecycle Management with Visual Studio 2013” from Wrox Publishing. When he’s not working, Brian enjoys spending time with his wife and two children.

Walt Ritscher
Senior Staff Instructor, LinkedIn Learning / Lynda

Walt’s enthusiasm for crafting software interfaces blossomed early. Just a few days after discovering how to move pixels around a computer screen he was devouring books on the topic of computer graphics and UI design. Before long he was sharing his discoveries with other technology buffs, a lifelong pursuit that has led to teaching engagements at universities, private training companies and the international conference circuit. As a consultant, he has worked with a wide spectrum of clients, including Microsoft, HP, and Intel. He is now a senior staff instructor for LinkedIn Learning / Lynda, developing courses on a variety of subjects including game development, mobile app development, and UI/UX design. When he’s not working, Walt enjoys spending time with his wife, Vicki, and two dogs.
SPEAKERS (continued)

Michael Rys
Principal Program Manager, Big Data, Microsoft

Michael Rys is a principal program manager at Microsoft. He has a PhD in Database Systems from ETH Zurich, Switzerland and was a Post-Doc and Research Associate at Stanford University before joining Microsoft. His main interests are in helping people to process their data more easily and efficiently. He has represented Microsoft on the XQuery and SQL design committees and has taken SQL Server beyond relational with XML, Geospatial and Semantic Search. Currently he’s working on Big Data systems and query languages such as Cosmos/SCOPE, Spark and .NET, and Azure Data Lake/USQL when he’s not enjoying time with his family underwater or at autocross. Follow him on Twitter: @MikeDoesBigData.

René van Osnabrugge
DevOps Consultant, Xpirit

René is always looking for improvements on all fronts. By using modern technology, implementing Continuous Delivery, DevOps practices and coaching in the domain of Scrum and Agile, he helps companies improve their software delivery process. René is an active blogger and speaker at both national and international conferences where he shares his knowledge of his passion: Application Lifecycle Management and DevOps. To share the passion even more, he started the worldwide event, Global DevOps Bootcamp, which ran in 35 countries simultaneously. Since 2012 he is Microsoft MVP in Visual Studio and Development Technologies.

Edward Thomson
Product Manager, GitHub

Edward Thomson is a Product Manager at GitHub. Prior to that, he was a software engineer at GitHub, Microsoft and SourceGear. He’s a maintainer of open source projects, and a passionate advocate for free and open source software.

Jennifer Wadella
Founder, Kansas City Women in Technology

Jennifer Wadella has been writing code since before she realized it was a credible career path. She currently works as a JavaScript Consultant and loves building performant web applications, speaking at technical conferences, and brewing kombucha. Jennifer is an active member of the KC tech community and the founder of Kansas City Women in Technology (KCWiT), an organization aimed at growing the number of women in technology careers in Kansas City. She is the PubConf Sydney 2018 Champion, a Silicon Prairie Champion Award Nominee, Rising Trendsetter STEMMy award-winner, and is apparently Missouri’s Coolest Woman according to Pure Wow.

Michael Washington
Founder, AiHelpWebsite.com

Michael Washington is the founder of AiHelpWebsite.com. He is a .NET, C#, and Angular programmer. He has extensive knowledge in process improvement, billing systems, and student information systems. He is a Microsoft MVP. He is the author of numerous books including Azure Machine Learning Studio For The Non-Data Scientist and An Introduction to the Microsoft Bot Framework. Michael has a son, Zachary and resides in Los Angeles with his wife Valerie. @ADefWebserver

“NETWORKING EVENTS WERE GREAT. SPEAKERS ARE AMAZING! AN ALL TECH EVENT WITH LOTS OF LIVE DEMOS! EXCELLENT!”

– Ajay Bhosle, Accenture
SPECIAL THANKS TO OUR PARTNER & EXHIBITORS

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**EXHIBITORS**

Team Time Reporting

Team Time Reporting (TTR) is designed to integrate with Azure DevOps. Once implemented, TTR will connect to as many Azure DevOps projects as needed. Project work items are immediately synchronized when hours are entered/removed through the TTR UI. TTR also allows for the tracking of project hours that are not associated to work items. As the new centralized system for time entry, TTR tracks hours from all projects, displaying data through several custom reports. [https://www.teamtimereporting.com](https://www.teamtimereporting.com)

WhiteSource

WhiteSource helps developers find and fix open source security vulnerabilities within their native environment. Our platform becomes part of your SDLC and automates the process of open source components selection, approval, and management, including finding and fixing vulnerable components. [www.whitesourcesoftware.com](http://www.whitesourcesoftware.com)

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TRAVEL

AVIS RENT-A-CAR is offering a discount on car rental for Visual Studio Live! Las Vegas attendees. To receive the discounted rates, call Avis at 800.331.1600 and use the Avis Worldwide Discount (AWD) number D005872, or click here to make your reservation online.

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Take advantage of all the city of Las Vegas has to offer. Visit the Las Vegas Weekly site for information on places to visit and things to do in Las Vegas.
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<thead>
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<th>CONFERENCE PACKAGES</th>
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Visual Studio Live! Las Vegas offers savings to teams of 3 or more from the same company and registering for the same package. Looking to bring 10 or more? Contact our Conference Registrar Joyce Jackson at jjackson@converge360.com or at 949.296.9840.

TEAM PACKAGES

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<th>Package</th>
<th>Super Early Bird Until Jan 17</th>
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ADD THE VSLIVE! CONFERENCE ON-DEMAND CONTENT PACKAGE* AND EXTEND YOUR LEARNING

Extend your learning with on-demand access to all of the recorded content from the VSLive! Las Vegas sessions (does not include workshops or hands-on labs) taking place Tuesday, March 3 – Thursday, March 5. The VSLive! On-Demand Content Package gives you access to all sessions, keynotes and panel discussions shortly after the conference ends for one full year.

*Workshops and Hands-on Lab Recordings are not included with the On-Demand Package

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