



Sarah Withee

*Polyglot Software Engineer, Hardware Tinkerer,
International Public Speaker, Teacher, Mentor, and Geek*

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Skills

Knowledgeable (used in production):

Languages:	PHP, JavaScript, C#/ASP.net, Java, C++, Scala, Python, SQL, Ruby	Databases:	MySQL, SQL Server, SQLite
Frameworks:	jQuery, Symfony, ExtJS, Android, Twilio, Ruby on Rails	Version Control:	Git and GitHub, Subversion (SVN), Team Foundation Server
Cloud/DevOps:	Travis CI, AppVeyor, Heroku, AWS (S3, ECS, ECR, Aurora), Azure (Web Services, Functions), Terraform	IDEs:	Visual Studio, VS Code, JetBrains/IntelliJ suite, Eclipse

Learning/Experimenting With (not used in production):

Azure (IoT Hub, Service Queues), Laravel, Xamarin, MongoDB/NoSQL

Work Experience

Arcadia.io, Pittsburgh, PA

Software Developer Generalist, Data Pipeline team

Feb 2018 – Feb 2019

On the Data Pipeline team, we developed a system to replace an expensive third-party component to bring in electronic healthcare records. As a generalist on the team, I worked on a large variety of technologies and languages to help implement the core microservices in the system.

- Inherited a Ruby on Rails project from a former team member, and learned it to make various changes including Dockerizing the app, prepping the CI build, and starting AWS configurations for it, all in about two weeks
- Researched and learned AWS services to start incorporating them into our product's different modules
- Containerized monitoring services, then configured build systems to build the service automatically
- Wrote Terraform scripts to deploy monitoring services, AWS Kinesis Firehose, and ElasticSearch
- Analyzed the cost analysis of using different cloud services for internal monitoring services
- Added API endpoints to product monitoring services
- Interviewed new candidates for the team
- Have contributed to every code base the team owns

Stowers Institute for Medical Research, Kansas City, MO

Software Developer, Laboratory Information Management System (LIMS) team

Jul 2016 – Nov 2017

As a member of the LIMS team, I developed software that over 400 scientists use in their daily research.

- Collaborated with Tissue Culture lab members to rewrite the Tissue Culture module in the newer LIMS frameworks, which with their regular input, helped make the module optimize their workflow and speed up their data point entries
- Developed new features for the new Molecular Biology NGS module
- Installed and configured a daily documentation generator for the backend codebase

Commerce Bank, Kansas City, MO

Software Developer

Jun 2015 – July 2016

I was a part of the Developer Acceleration Program (DAP), which introduces the new developers to the processes and security protocols at the bank by rotating them through teams before settling on a team full time.

- Architected and developed a team data metric reporting system in the initial 3-month onboarding period using C#, ASP.net, and MVC, which continues to be used and adopted by new departments
- Extended the Branch Connections framework in C# to utilize a third party loan document service, which saved money and time needed to keep up with latest federal and local loan laws
- Broadened and upgraded Middleware's event messaging framework to use Java 7 to comply with SSL and PCI card requirements
- Created a real time fraud detection system using Hadoop, Spark, Python, Java, and R at a hackathon, which was estimated by the fraud prevention department to prevent up to \$1.2 billion in fraudulent transactions

Lexmark (formerly Perceptive Software), Lenexa, KS

Summers 2013, 2014

Software Engineering Intern: Healthcare Integration (2014) and Business Intelligence (2013)

- Built a new automated testing framework for business intelligence reports using C++ and CPPUNIT
- Implemented new features for Perceptive Photo Transfer Client in C#
- Solved bugs and developed features for Perceptive Photo Capture in JavaScript with jQuery
- Created unit tests in JavaScript using Backbone.js and Sinod.js
- Solved Unicode bugs and added internationalization in BI products using Java

Previous Tech Experiences

- Taught five lab and two lecture intro to C++ university computer science classes (2012-2015)
- Developed web sites in PHP and provided hosting service while running my own business (2009-2012)
- Developed custom Windows scripts and websites in VBScript and Sharepoint for a tech support consulting company (2007)
- Developed custom online stores in ASP for an e-commerce shopping cart software company (2005)

Projects

Code Thesaurus – github.com/codethesaurus/

A polyglot developer reference tool to help you compare languages you know with ones you don't for reference or learning. An open-source application that's in progress.

Rest of Us in Tech – restofus.tech

The Rest of Us in Tech is an inclusive initiative for the tech community which highlights projects and accomplishments of underrepresented people in tech. I'm the founder and host of the podcast, currently available on iTunes, Google Play, and most other podcast apps.

Hardware Projects and Robotics – github.com/geekygirlsarah/umkc_robot_2013_arduino and [umkc_robot_2014](https://github.com/geekygirlsarah/umkc_robot_2014)

From 2011 until 2014 I was involved in my university's robotics competition team. I also mentored middle and high school FIRST robotics competition teams during that time, where all teams won numerous awards and one middle school team went to the world championships. I have continued to tinker with hardware projects on the side to this day, and make code and diagrams available on GitHub.

LED Dress / LED Christmas Tree – github.com/geekygirlsarah/msgeq7 and [led_christmas_tree](https://github.com/geekygirlsarah/led_christmas_tree)

A dress covered in LEDs that are responsive to music or sound that's playing around it. Similar code and hardware were used to build a Christmas tree that blinked in patterns based on Christmas music that was playing, and won an award at a company competition.

Speaking and Conferences

I have been speaking, teaching, and mentoring since 2011. I have spoken at dozens of events locally, nationally, and internationally. I have organized multiple conferences as well. All of my notes, videos, and slides can be found at sarahwithee.com/talks

Conference and Meetup talks:

- Doors (keynote, Tectonica launch celebration 2018)
- Heartifacts emcee (Apr 2018)
- Building an Open Source Artificial Pancreas (May 2019)
- Intro to Hacking with the Raspberry Pi (8 times)
- A Primer on Functional Programming (7 times)
- Building Your Team to Last: Successful Onboarding and Mentoring Practices (4 times)
- The Power of Secrets (3 times)
- Maintaining Your Mental and Emotional Health While Job Hunting (2 times)
- "Hey Mycroft": Getting Started with the OSS Home Assistant (1 time)
- Pursuing a Passion Project: Struggles and Successes (1 time)
- Life as a Midwestern Developer (1 time)
- Discussion panels (6 times, moderated 2 times)
- Assorted lightning talks (7 times)

Workshops and Classes:

- Workshops and classes with local meetups and women in tech organizations
- Girl Develop It programming classes (Kansas City and Pittsburgh, 2016-2018)
- Arduino, Raspberry Pi, hardware, and programming workshops (2016-2017)
- Tech sHeroes after school programming classes in a Kansas City high school (2014-2015)
- Elementary, middle, and high school visits teaching circuits, showing off robots, and talking STEM jobs (2011-2014)

Conference Organizing and Volunteering:

- Director of Programming, Abstractions 2 (August 2019)
- Conference Chair, Missouri, Iowa, Nebraska, Kansas Women in Computing (Oct 2013, Oct 2015, Nov 2017)
- Volunteer, Strange Loop (Sept 2016, Sep 2017, Sep 2018)
- Organizer, Society of Women Engineers Region i (Feb 2015)

Education

University of Missouri-Kansas City, Bachelor of Science in Computer Science