



Seth Kitchen

Resumé

EIT from Missouri who enjoys running, playing music, building rockets, and writing code. I want to make positive contributions to the world.

Education

2014–2019 **BS Aerospace Engineering, BS Computer Engineering, Electrical Engineering Minor, Computational Intelligence Emphasis,**
Missouri University of Science and Technology, Rolla, MO.

Experience

Vocational

May 2021 - **Lead Full Stack Developer, AIM Consulting/UHG Optum, Saint Louis, MO.**

Present We are building an **Azure Cloud** function to process insurance claim files at the start of a pipeline. Customers setup scheduled or immediate pipelines, delimited/non-delimited files and their dependencies in the **ReactJS** front-end which sends data to both **REST** and **GraphQL** APIs written in **NodeJs / MongoDB**. When a pipeline event is triggered files get sent to the cloud function to check requirements, reorganize, and push downstream. All code are orchestrated with **Kubernetes, Helm, and Docker**. Test cases written in **Mocha, Puppeteer**.

January 2020 **Senior Application Developer, Compatio, Springfield, MO.**

- May 2021 I managed and worked with an India team using **Flutter** cross-platform development with **VueJS**, both **REST** and **GraphQL** APIs written in **NodeJs/ExpressJS, Flask, ElasticSearch, Kibana, Redis, and Neo4J**. Compatio deals with how things go together (compatibility). Its **ElasticSearch** development is done via local **Docker / Docker-Compose** containers and deployed to **AWS** for production. The entire system is built on a graph architecture and a taxonomy of rules which relate product attributes. For example a bicycle crankset has a diameter which a chain must match in order for them to work together. Offering this information at checkout ensures purchases work and are helpful to bundle together. I built a marketplace and social product experience - Facebook meets **Amazon**.

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📄 <https://github.com/SethKitchen>

- Nov 2019 - **Data Science Contractor**, *StrategyWise/Southern Power*, Birmingham, AL.
 January 2020 Provide deep learning (multi-layer perceptron, recurrent and convolution neural networks) support for various projects. I wrote predictive models in **Python**, **Pandas**, **Sci-kit**, and **Tensorflow** which decreased mean squared error (MSE) of energy trading and wind turbine models by more than 100 times. Company acquired.
- May 2018 - **Software Engineer**, *Garmin Aviation*, Olathe, KS.
 August 2018 Garmin sells solutions for private and kit planes. I worked on an Electronic Circuit Breaker which stops a technician from having to go deep into a plane to flip a breaker manually. I wrote a simulator for the PCB hardware so software could be tested before deployment over **CAN bus**. I also wrote over 100 Module Tests so the software had full coverage which is required by the FAA. This work was done in **C** and **ARM** assembly
- June 2017 - **Retail Technology**, *Walmart*, Bentonville, AK.
 August 2017 At **Fortune 1**, I worked on the electronic payments team. When a credit/debit card is swiped in a Walmart store, its credentials are sent securely through Walmart's systems and to an authorizer. During the process, hundreds of errors codes can be generated and information about which authorizers are selected are valuable to pay the lowest rates. This information was displayed on a **Silverlight** dashboard. The developer on the project died, the source code was lost, and the framework was obsolete. I upgraded the code to **AngularJS 2**. The APIs were being upgraded from **COBOL** to **Java 8** at the time).
- May 2015 - **Computer Engineer**, *Hunter Engineering*, Bridgeton, MO.
 January 2016 Hunter engineering works on automotive equipment (alignment, tread-depth, tire balancer, etc). I brought a new product from inception to beta testing. After a car drove over a tread-depth sensor we sent a signal to an **IP camera** sitting on a gantry over FTP Server. The camera took 10 pictures of the back of the car and sent them through **License Plate Recognition Software** which pulled the plate number and state code. This data was then sent to **Carfax** APIs to retrieve **VIN** numbers from which other car data like make, model, year, tire diameter, etc. could be pulled. We worked on optimum angle of camera using **Applied Mathematics** and **Trigonometry** and camera settings like contrast, filters, etc. The software created was in **Visual Studio / .NET C#** and **C++**)

Miscellaneous

- 2013–2014 **BPO Photographer**, *Southern Oaks Realty*, O'fallon, MO.
 Took pictures of houses for banks so realtors could do Broker Price Opinions.

Languages

C#	6 Years	<i>My Favorite Language. Console programs, Windows applications, Xamarin</i>
Java	8 Years	<i>5 on AP, Java Swing, Android</i>
Javascript	5 Years	<i>Use with NodeJS and front ends</i>
HTML5/CSS3	5 Years	<i>Use with website front ends.</i>
C/C++	6 Years	<i>Use for college classes, competitive programming</i>
Python	4 Years	<i>Use with Raspberry Pis, Deep Learning</i>
Dart	1 Year	<i>Use with Flutter</i>

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Computer skills

Word, Excel, PowerPoint, Ansys, RockSim, LaTeX, Solidworks, Eagle, Visual Studio

Interests

Competitive Programming Rank 6 in the world on open.kattis.com. 1st Place Global Hack VI (\$100,000 prize).
SIG-Competition Chair.

Running Distance and Track

Music Drums, Keyboard, Guitar

Design Team Work

- Chief Engineer 2017-2018. Design collegiate altitude record breaking rocket. Work on Guidance and Motor Fed Staging.
- Electronics Lead Rocket Design Team 2016-2017. Create 4 bays of electronics which can communicate telemetry data over Wi-fi, send data back to ground over helical antenna, and initiate stage transformation for groundbreaking motor fed staging concept.

Other Projects

- Wizards In Space - Unreal Engine Video Game
- Collaborator - GPS Music App

Research

- *On the Existence of Perfect Cuboids* 1st place Undergraduate Research Fair
- *On Formal Concepts Related to Partial Credit Grading*
- *On Parafoils Related to Human-Powered Bicycle Aircraft*
- *Navier-Stokes Smoothness and Bound Problem*
- *Wi-fi Telemetry- 1st Place ITC*

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