

Kevin L. Madison

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Education

University of South Carolina | Columbia, SC

- **Master of Science** in Computer Science and Engineering
- **Bachelor of Science** in Chemical Engineering

Graduated: May 2019

Graduated: May 2015

Employment

Systems Engineer, Krumware

May 2018 - Present | Columbia, SC

- Primary back-end engineer for a VC backed financial tech application. The application uses a microservice architecture orchestrated with Rancher on AWS. It uses self-hosted and AWS managed instances of PostgreSQL databases talking to several integration services and multiple REST APIs. Identity management is provided by Auth0 and we manage the continuous delivery pipeline using Jenkins. **(Python, Node.js, PostgreSQL, Flask, Rancher, Jenkins, AWS, Swagger)**
- Back-end to front-end integration as well as adding custom components. **(Redux, lit-html)**
- Developed the Kubernetes infrastructure for a client's microservice architecture. **(Docker, Kubernetes)**
- Implemented several test harnesses and unit/integration tests for Express.js APIs as well as dockerized MongoDB integration tests for easy Jenkins integration. **(Node.js, MongoDB, Docker, Jenkins)**
- Implemented and merged multiple middleware hooks to the open source Node.js plugin historical.js leading to a new release of the plugin. **(Node.js, Mongoose.js)**
- Developed a logging service and API backed by Elasticsearch and Kibana. **(Node.js, Elasticsearch, Kibana)**

Researcher Assistant, University of South Carolina - Heterogeneous and Reconfigurable Computing Lab

Summer 2018 | Columbia, SC

- Investigating large-scale shared memory architecture tools such as the Hybrid Memory Cube Protocol and the Persistent Memory Development Kit.
- Wrote and improved shared laboratory system administration utilities. **(Rust, Python, Bash)**

Teaching Assistant, University of South Carolina - Computer Science and Engineering

August 2017 - May 2018 | Columbia, SC

- Full-time lead TA for the Introduction to Algorithmic Design course at USC **(Java)**

Research Intern, Integrated Material Assessment & Predictive Simulation Lab, USC

May 2017 - August 2017 | Columbia, SC

- Wrote a large portion of code for a \$775,072 NASA grant titled "Multi-scale Computational Non-destructive Evaluation (NDE) for Composites". Converted a Matlab Distributed Point Source Method simulator into C++ and parallelized it to run on the lab's 40 core in-house high-performance computer. **(C++, OpenMP)**

Mentor, Google Ignite CS

April 2017 | Columbia, SC

- This was a one week initiative funded by Google where I and several other CS students went to a local high school and taught students how to build a browser-based game. **(Javascript, HTML/CSS, Linux)**

Characterization Technician II, Sensor Electronic Technology Inc.

September 2011 - February 2017 | Columbia, SC

- Developed several tools used to automate complex data analysis and data entry tasks, increasing the throughput of the characterization lab and resulting in an estimated yearly savings of \$20,000. **(Python, Excel)**

Projects/Skills/Hobbies

Maeve: A text-based game engine with an architecture that harnesses Google's protocol buffers. **(Rust)**

Mips Processor: Implemented a fully functioning, In-Order, 3-Stage pipeline MIPS Processor completely from scratch, that could read the 32 fundamental I, R, and J MIPS instructions from On-Chip Memory and execute them. **(Verilog, Quartus, Modelsim)**

Languages: English-Native, French-Fluent, Mandarin- Basic, Greek- Basic, German-Basic, Spanish-Basic