

M. COOPER HEALY

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WORK EXPERIENCE

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| — | Software Engineer |
| 2023 | <i>Arbol Inc</i> , New York, NY <ul style="list-style-type: none">◦ Stood up new microservices to automate contract confirmation process for legal team◦ Worked directly with stakeholders to adapt to changing usage requirements◦ Led project for platform tooling, organizing work to be done and customer feedback◦ Led several deep refactors to improve performance and maintainability in multiple codebases◦ Became domain expert in tooling used for all document generation and management in services |
| Tech | <i>TypeScript, AWS, Hasura, Docker, PostgreSQL</i> |
| 2023 | Senior Software Engineer (Labs Team) |
| 2023 | <i>Copper CRM</i> , San Francisco CA <ul style="list-style-type: none">◦ Designed and implemented distributed job system to parallelize computation◦ Restructured microservices in a serverless pattern, greatly reducing runtime cost◦ Worked directly with product manager to adapt to changing requirements based on user feedback◦ Brought brand-new product to public launch seamlessly◦ Worked with Designers and front-end engineers to adapt to changing usage requirements◦ Performed time-series data analysis to determine meaningful parameters for user's relationships◦ Developed comprehensive analysis tool for client relationship insights◦ Integrated new analysis tool with existing infrastructure to increase application's ability to respond to user needs◦ Developed internal tools to prevent common issues in development and deployment of distributed system |
| Tech | <i>Go, Julia, gRPC, Docker, Kubernetes, Kafka, DynamoDB</i> |
| 2023 | Software Engineer |
| 2021 | <i>C2FO</i> , Leawood KS <ul style="list-style-type: none">◦ Developed AWS Lambda functions in Python as part of a completely event-driven architecture◦ Developed core NestJS-based design for microservices to follow◦ Migrated backend from event-driven architecture to distributed microservices◦ Created testing suite for entire suite of microservices, reducing service fragility and downtime◦ Created team standards for code quality and test coverage, enforcing them with GitHub Actions◦ Created injectable, distributed authentication system for both internal and external users◦ Architected and owned use of Multi-Factor Authentication site-wide◦ Owned and standardized design and use of data access layer across microservices with Prisma◦ Designed and implemented cardholder signup workflow and dataflow◦ Automated process to search all customers and extend line-of-credit offers with Python◦ Coordinated with Data Engineers to ensure that queries were performant and concise◦ Created API allowing tool for generating line-of-credit offers to be triggered by internal tool◦ Created cardholder onboarding page in react, working with design team and ops team to ensure a pleasant customer experience◦ Led other junior engineers in planning and executing work◦ Brought CashFlow+ Card from ideation to production in 9 months◦ Worked closely with product teams to shape and prioritize work◦ Created and maintained connective APIs with third party vendors, ensuring stability of service |
| Tech | <i>TypeScript, React, Python, PostgreSQL, AWS Lambda, Docker, Kubernetes, NestJS, Kafka, RabbitMQ</i> |

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| 2021 | Software Engineer II <i>Garmin International, Olathe KS</i> |
| | <ul style="list-style-type: none"> ◦ Added authentication for integration tests, removing the need to store credentials ◦ Wrote new layer to allow use of SSL in customer-device authentication ◦ Secured internal endpoints on production services by adding secured connective layer ◦ Wrote custom application-layer API handling in C++ to allow for more complex internal API usage ◦ Updated server to handle requests for map data by customer navigation devices in C++ ◦ Owned and maintained authentication system for all incoming traffic from customer navigation devices ◦ Diagnosed issues with route-planning AI by dissecting graph datastructure to find integrity issues |
| Tech | <i>C++, Boost, PostgreSQL, Docker, QEMU</i> |
| 2021 2020 | Software Engineer / DevOps Liason <i>Service Management Group, Kansas City MO</i> |
| | <ul style="list-style-type: none"> ◦ Developed tools to monitor and diagnose data quality issues on a large scale ◦ Mitigated client-impacting issues with data quality in a timely and permanent manner ◦ Redesigned messaging architecture for critical and high load infrastructure applications ◦ Owned and maintained orphaned projects and updated and upgraded them to fit new standards ◦ Wrote Python tool to analyze millions of records of data to determine source of data issues ◦ Created infrastructure to automate future data-integrity analysis, severely reducing workload ◦ Updated all data-accessing code to be parallelized and performant ◦ Added tests to all legacy code to allow for more stable iteration and improvement |
| Tech | <i>C#, PostgreSQL, Kafka, RabbitMQ, elasticsearch, TypeScript, AngularJS</i> |
| 2020 2019 | Software Engineer <i>Cboe Global Markets, Lenexa KS</i> |
| | <ul style="list-style-type: none"> ◦ Designed scalable software to automate analysis of market data ◦ Prioritized business logic by representing consumers of analysis in design discussions ◦ Managed the migration of hundreds of scripts to improved analysis framework ◦ Promoted TDD for all new software through development of new test suite ◦ Designed overarching structure for new data engineering workflows with Hadoop and Spark ◦ Created Python microservices to analyze market data to create trend reports ◦ Wrote performant PostgreSQL queries to perform statistical analysis of market data nightly ◦ Worked in on-call cycle to mitigate company-wide data quality concerns at all hours ◦ Coordinated with NYSE and Nasdaq to create common format for new SEC compliance report ◦ Collaborated with platform team to create new framework for large-scale market analysis |
| Tech | <i>Python, PostgreSQL, Hadoop, Spark</i> |
| 2019 2018 | Software Engineering Intern <i>Garmin International, Olathe KS</i> |
| | <ul style="list-style-type: none"> ◦ Owned and maintained .NET tool for configuration of airframes ◦ Designed testing framework to ensure integrity of new airframe configurations ◦ Guided two other interns in updating and maintaining said testing framework ◦ Collaborated directly with users to design new features based on need ◦ Created comprehensive tests for all existing code within .NET codebase ◦ Refactored process-scheduling functionality within embedded GIA64 Operating System |
| Tech | <i>C#, Python, Embedded C</i> |

EDUCATION

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| 2019 | Bachelor of Science, Computer Science Missouri University of Science and Technology, Rolla MO GPA: 3.5/4.0, Major GPA: 3.9/4.0 Cum Laude |
| 2029 | Master of Science, Computer Science (Robotics and High-Performance Computing) Georgia Institute of Technology, Atlanta GA |

RESEARCH EXPERIENCE

2018 | **Research Assistant — Data Science**

2017 | *Dr. Gayla Olbricht*, Missouri University of Science and Technology

- Looked for statistical connection between certain alleles and presence of alzheimer's disease
- Analyzed neuroimaging datasets to look for relationship between age and SOD2 allele
- Tested for differences in structures and SOD2 status using multivariate analysis of covariance
- Measured five different aspects of white matter structural integrity by analyzing DTI data
- Co-authored a paper describing the project and presented research to a board of peers
- Collaborated with other scientists to ensure research aligned with existing work
- Performed statistical analysis over several gigabyte dataset using Numpy, Pandas, and R

ASSOCIATIONS

2016-2019 | **Missouri University of Science and Technology Underwater Robotics Team**

2017-2018 | **Missouri University of Science and Technology Sig-Game**

2015-2016 | **American Nuclear Society**