M. Cooper Healy

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Work Experience

— | **Senior Software Engineer**
2023 | *Copper Labs*, San Fransisco CA
- 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 | *Go, Julia, gRPC, Docker, Kubernetes, Kafka, DynamoDB*

2023 | **Software Engineer**
2021 | *C2FO*, Leawood KS
- 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 | *TypeScript, React, Python, PostgreSQL, AWS Lambda, Docker, Kubernetes, NestJS, Kafka, RabbitMQ*

2021 | **Software Engineer II**
Garmin International, Olathe KS
- 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 | *C++, Boost, PostgreSQL, Docker, QEMU*

2021 | **Software Engineer / DevOps Liason**
2020 | *Service Management Group*, Kansas City MO

- 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 | *C#, PostgreSQL, Kafka, RabbitMQ, elasticsearch, TypeScript, AngularJS*

2020 | **Software Engineer**
2019 | *Cboe Global Markets*, Lenexa KS

- 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 | *Python, PostgreSQL, Hadoop, Spark*

2019 | **Software Engineering Intern**
2018 | *Garmin International*, Olathe KS

- 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 | *C#, Python, Embedded C*

Education

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

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**