Cameron McGinley

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Education

University of California San Diego — **La Jolla, CA**
M.S. in Computer Science | Systems Specialization | GPA: 3.95 / 4.00 — *Sep. 2022 – Dec. 2023*

Wichita State University — **Wichita, KS**
B.S. in Computer Science | Minor in Mathematics | GPA: 3.99 / 4.00 — *Aug. 2018 – May 2022*

Experience

Software Engineer Intern — **June 2023 – Aug. 2023**
Capital One — *McLean, VA*

- Developed AWS Lambda functions in Python to automate data collection from AWS EMR instances.
- Created a custom metric system using Databricks and PySpark to compute daily metrics from 50-100k records, such as new accounts and unique accounts, filling gaps not covered by existing metrics.
- Automated report and dashboard generation with statistics and over-time data visualizations, delivering them via Email and Slack to enhance stakeholder communication.

Software Engineer Intern — **May 2022 – Aug. 2022**
U.S. Department of Defense — *Washington, DC*

- Led the design and implementation of a Python-driven C/C++ software assurance system specializing in lexical analysis, handling source code with millions of lines of code at speeds 30-50x faster than previous toolset.
- Applied secure coding expertise to write Python test cases to identify more than 20 types of source code vulnerabilities, such as weak cryptography or self-modifying code.

Test Engineer Intern — **May 2019 – May 2022**
NetApp — *Wichita, KS*

- Automated firmware testing for data storage systems using Python, ensuring stability and interoperability across various servers, switches, drives, and protocols (e.g., iSCSI, NVMe).
- Developed Python tools to track test configurations and versions via NetApp, Windows, and Linux APIs, saving each QA engineer 10 minutes daily and improving management oversight.

Machine Learning Research Intern — **June 2021 – July 2021**
Purdue University — *West Lafayette, IN*

- Developed a Python-based scraper to generate datasets of buggy and non-buggy Java code from open-source repositories and bug fix commits, then trained machine learning models on the data.
- Applied cross-entropy analysis to show 5-15% higher entropy in buggy datasets; high variance limits practical use.

Machine Learning Research Intern — **June 2020 – Aug. 2020**
Wichita State University — *Wichita, KS*

- Utilized Python, TensorFlow, and Keras to build a malicious email classifier using a convolutional neural network, optimizing the final model for accuracy (98.1%), recall (98.1%), and precision (98.3%). [Publication]

Projects

Projectile Points Web Database | TypeScript, Next.js, React, PostgreSQL, GraphQL | [GitHub]

- Built and deployed a full-stack web app for arrowhead archaeological data, akin to Wikipedia.

Optimized Brainf* Lang Interpreter** | C++ | [GitHub]

- Implemented pattern matching and peephole optimization to reduce instruction count in the Brainf*** language.

Skills

Languages: TypeScript/JavaScript, Python, C++, SQL
Frameworks/Libraries: Docker, React, Next.js, Node.js, GraphQL, Pandas, PySpark, Express, Jest
Cloud/DevOps: AWS (EC2, S3, Lambda, DynamoDB), Postgres, Firebase, Databricks, Jenkins
Tools: Git, Linux (RHEL, SUSE), Postman, GDB, Valgrind