# Cameron McGinley

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## Education

**University of California San Diego** — La Jolla, CA
M.S. in Computer Science | Computer Systems Specialization — September 2022 – December 2023
- GPA: 3.97 / 4.00

**Wichita State University** — Wichita, KS
B.S. in Computer Science | Minor in Mathematics | Honors Track — August 2018 – May 2022
- GPA: 3.99 / 4.00
- 2020 VP, 2021 President of IEEE-HKN Chapter

## Experience

**Capital One** — McLean, VA
Software Engineer Intern — June 2023 – August 2023
- Leveraged Databricks with Python and PySpark to efficiently compute business and performance metrics based on 50-100k records daily, and created AWS Lambda functions for automated data collection from EMR instances.
- Automated dashboard and report generation and delivery (Email + Slack webhooks) to stakeholders, in addition to an alerting system for unexpected results.

**Department of Defense** — Washington, DC
Software Engineer Intern — May 2022 – August 2022
- Led the design and implementation of a Python-driven C/C++ software assurance automation system specializing in lexical analysis, handling source code with millions of lines of code at speeds 40-50x faster than previous toolset.
- Applied secure coding expertise to write Python test cases to successfully identify more than 20 types of source code vulnerabilities, such as weak cryptography or self-modifying code.

**NetApp** — Wichita, KS
Test Engineer Intern — May 2019 – May 2022
- Wrote Python scripts to automate firmware testing for data storage systems, ensuring stability and interoperability across diverse configurations of servers, switches, drives, and communication protocols (e.g., iSCSI, NVMe).
- Developed Python software to collect and track test configurations and versions through NetApp, Windows, and Linux system APIs, saving each QA engineer ~10 minutes daily and improving management's view of testing.

**Purdue University** | Advisor: Dr. Yongle Zhang — West Lafayette, IN
Machine Learning Research Intern — June 2021 – July 2021
- Designed and developed a Python-based scraper to generate large datasets of buggy and non-buggy Java code from open-source repositories, employing bugfix Git commits and Jira issues for automatic classification of buggy code.
- Computed cross-entropy on n-grams of Java code, discovering up to 15% greater entropy in buggy lines of code.
- Explored integration of graph neural networks with PyTorch on code dependency graphs to inform future work.

**Wichita State University** | Advisor: Dr. Sergio Salinas — Wichita, KS
Machine Learning Research Intern — June 2020 – August 2020
- Utilized Python, TensorFlow, and Keras to build a malicious email classifier on a convolutional neural network, optimizing a final model for accuracy (98.1%), recall (98.1%), and precision (98.3%). [Publication Link]
- Developed prototype natural language generation software on top of OpenAI's GPT-2 to imitate victims while responding to malicious emails, aimed at wasting attackers' time.

## Projects

**Projectile Points Web Database** | *TypeScript, Next.js, React, PostgreSQL, GraphQL* | GitHub Link
- Built and deployed full-stack web application that serves as a Wikipedia-like information storage specialized for arrowhead archaeological data, using React with Next.js and a GraphQL API with Postgres database.

**Optimized Brainf*** Interpreter** | *C++* | GitHub Link
- Implements pattern matching and peephole optimization, drastically reducing instruction count and runtime (74.6% decrease in operations on Mandelbrot calculation) in the Brainf*** programming language.

## Skills

- **Languages**: Python, C++, TypeScript/JavaScript, SQL
- **Frameworks**: React, Next.js, Node.js, PostgreSQL, GraphQL, Prisma
- **Tools**: Git, AWS (EC2, S3, Lambda, EMR), Databricks, GitLab CI/CD, Linux (RHEL, SUSE)