Cameron McGinley

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Education

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

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

Experience

U.S. Department of Defense — Washington, DC
Software Engineer Intern — May 2022 – August 2022
- Architected codebase and workflow for Python development of a C/C++ software assurance automation system, maximizing reusability and maintainability.
- Leveraged expertise in secure coding to write Python test cases to identify more than 20 types of source code vulnerabilities through lexical analysis, such as weak cryptography or self-modifying code.
- Designed standards and CI/CD, led code reviews, compliance, and merging.

NetApp — Wichita, KS
Test Engineer Intern — May 2019 – May 2022
- Automated testing of data storage system firmware to ensure its stability and interoperability with diverse configurations of servers, switches, drives, and protocols (e.g., NVMe).
- Developed Python software to collect and track 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
- Developed scraper with Python to build datasets of buggy and non-buggy Java code from open source repositories, classifying buggy code through bugfix Git commits and Jira issues.
- Calculated cross-entropy (probability of sequence occurring) on n-grams of Java code with NLTK, finding up to 15% greater entropy in buggy lines of code.
- Integrated graph neural networks using PyTorch to improve bug detection by working on code dependency graphs.

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 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.
- Features searching, creating, updating, deleting arrowhead data, each served on dynamic page.

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

Skills

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