Kevin Yuan

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Education

Oregon State University Sep. 2023 – Current
Masters in Computer Science; Expected Graduation: Jun. 2025 *GPA: 4.0*

The College of Wooster Aug. 2019 – May 2023
Bachelor of Arts in Computer Science *GPA: 3.99*
Awards: Dean's Scholarship, Local ACS Section Award, Independent Thesis Honors

Skills

Languages: C#, Java, Python, C++, SQL, JavaScript/HTML/CSS, Bash

Technologies: Docker, MongoDB, MySQL, ASP.NET, Django, REST API, Git/Github, Node.js/Express

Professional Experience

Tokyo Electron: Software Engineer Intern Portland, OR
C#, Customized Laboratory Information Management System, SQLServer *May 2024 - Sep 2024*

- Designed and implemented a system to automate the assignment of request priorities within a multi-level queue management framework. The system can dynamically respond to changing group priorities and enforce service requirements while ensuring non-invasive integration with current operations.
  - Created a virtualized database to support scalable and testable development, and resolved concurrent access issues in a multi-processing asynchronous environment, enabling robust handling of shared resources.
  - Provided override capabilities, enabling exclusive edits without interfering with automated changes.
  - Led the design and implementation of 15+ classes, 5+ entity designs, 10+ automated back-end tasks, and 5+ front-end forms, employing several design patterns and creative solutions to work with requirement and tool constraints.

Goodyear Tire and Rubber Company: Software Engineer Intern Wooster, OH
Python, Pytest, Pandas *May 2022 - July 2022*

- Developed a critical module within a tire analysis tool, streamlining and automating complex calculations and data dependencies that were previously handled manually, resulting in a significant improvement in efficiency and accuracy in data processing.

Project Experience

Open Source Contribution to SCARR: Side-Channel Analysis Framework [Github Link]
Python, Numba, Pool, Numpy, Scipy, Mpmath

- Wrote the Chi2Test.py engine for SCARR that used the χ^2 CDF and gamma function with high precision to perform TVLA and calculated p-values for the χ^2 Test of Independence. The engine outperformed competitor SCA frameworks in both speed and accuracy, processing 5 million traces in under 40 seconds (versus several hours) while maintaining high precision through optimizations techniques such as parallel processing and caching.
- Outperformed competitor SCA frameworks in both speed and accuracy, processing 5 million traces in under 40 seconds (compared to several hours) while maintaining high precision through optimizations techniques such as parallel processing and caching.

Course Management REST API
Node.js, Express, REST, MySQL, MonogoDB, GridFS, Redis, Docker, Docker-Compose, Postman

- Created a comprehensive Node.js/Express RESTful API for managing classes, assignments, personnels (students and instructors) with JSON Web Token authentication and robust pagination.
- Managed file submissions with HTTP multipart/form-data and stored in MongoDB GridFS.
- Implemented rate limiting with Redis and containerized the application using Docker-Compose.

Personal Expense Web Tracker Application [Github Link]
Django/Python, SQLite, Bootstrap, AJAX/Javascript

- Built a full-stack Django-based personal expense tracker web application, empowering users to micromanage expenses and budgets across diverse categories, subscriptions, and time frames.

AES Key Extraction
Python, Numba, Numpy

- Designed and executed efficient SCA attacks focusing on CPA and DPA techniques that processed gigabytes of trace data and extracted the secret keys from AES encryption in under 30 seconds.