Marwa Houalla
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Washington DC-Baltimore Metropolitan Area

Education

University of Michigan — Ann Arbor, Michigan
Honors Bachelor of Science in Computer Science; GPA: 3.9 — Sep 2020 - Dec 2023
Relevant Coursework: Advanced Operating Systems, Web Systems, UI/UX Design, Compiler Construction, Software Engineering

Experience

Wayfair — Boston, MA
Software Development Engineer Intern — June 2023 - Present

- Engaged in stand-up meetings, retrospectives, and sprints, fostering effective teamwork and timely completion of assigned tickets.
- Optimized data storage and retrieval processes by spearheading the deprecation of event stream data, resulting in a 30% reduction in storage space.
- Implemented an automated process in C# to remove outdated records from outbox tables, resulting in improvement of 15-20% in system efficiency and streamlined data management.
- Developed new POST endpoints to streamline the creation of promotional incentives for business-to-business and supply chain management purposes.

University of Michigan EECS — Ann Arbor, MI
Teaching Assistant for Data Structures & Algorithms — Dec 2021 - Present

- Assisted professors in teaching algorithm analysis, O-notation, and fundamental data structures (stacks, queues, deques, and hash tables) to over 900 students per semester.
- Led a weekly lab section, ideated and created exam questions, and provided guidance on conceptual topics through Piazza.
- Conducted weekly office hours to assist students in debugging and optimizing projects encompassing more than 1000 lines of code.

Grader for Introduction to Computer Architecture — Sep 2022 - Present

- Evaluated and graded over 800 assignments and exams on computer organization subjects, including caches, virtual memory, multi- and single-cycle datapaths, pipelining, and information set architecture.

T. Rowe Price — New York, NY
Software Engineer Intern — June 2022 - Sep 2022

- Developed comprehensive Grafana dashboards, integrating Prometheus, Telegraf, Splunk, and CloudWatch metrics, to provide valuable insights and enhance monitoring capabilities for the Enterprise HashiCorp Vault application.
- Designed and deployed a robust alerting system that ensures immediate notifications of Vault incidents, reducing incident response time by 60% and ensuring timely resolution.
- Integrated Sourcegraph code intelligence into the GitLab UI using Docker, resulting in an improved development workflow for all teams and enhancing their ability to work efficiently with the codebase.
- Leveraged Prometheus to collect firmwide VDI information, enabling the breakdown of data by geolocation to gain valuable insights into update and consumption patterns. These insights played a crucial role in informed decisions on the company's continued provision of VDIs.

Ford School of Public Policy — Ann Arbor, MI
Researcher — Sep 2020 - Present

- Collaborated closely with Professor Fabiana Silva to spearhead experimental research on hiring discrimination, resulting in actionable recommendations to address and mitigate biases in the hiring process.
- Designed and tested experimental stimuli, coded MTurk survey responses, and conducted comprehensive literature reviews. The findings and insights gained from this work have been published in reputable research journals.

Projects

Thread Library (C++17): Implemented sophisticated Thread Library to handle the creation, execution, and lifespan of multiple thread bodies on a multi-core architecture, equipped with advanced functionalities such as conditional variables, mutexes, generic threads, inner process interrupt capabilities, and thread lifetime management operations including yield and join.
Virtual Memory Manager (C++17): Designed and implemented virtual memory manager that supports file- and swap-backed pages, maintaining processes' address spaces via the pager interface, enabling syscalls, forking of child processes with non-empty virtual arena, and creating customizable memory sizes with a clock queue to control eviction orders and enable bits for read, write permissions and physical page residency.
LinkedIn Data Scraper and Classification Tool (Python 3): Created suite of scripts to extract recommendation data from LinkedIn profiles, facilitating in-depth textual analysis of the collected data using a Naive Bayes classifier and Scikit-learn Python framework. Analyzed gender-associated words as part of an Honors Thesis, achieving the highest ranking for this project.
Network Fileserver (C++17): Built and implemented a multi-threaded network file server with fine-grained locking, socket programming, client-server systems, and network protocols.

Skills

Languages: C++, C, C#, Rust, SQL, Python, JavaScript, HTML, CSS
Technologies: AWS CloudWatch, React, Grafana, Figma, GDB
OS: Arch Linux, MacOS, Windows