Anas Alhadi

(902)-329-9923 | Email | Linkedin | GitHub

Education

Dalhousie University Jan. 2021 – May. 2025
Bachelor's in Computer Science - First Class Honours - GPA: 4.1/4.3 Halifax, NS

Experience

Research Assistant Apr. 2024 – May. 2025
Dalhousie University Halifax, NS

- Designed, Developed and Tested novel rule updating algorithms for the SCHC compression protocol used in IoT networks, with a focus on improving the protocol's performance in mobile networks.
- Leveraged the use of real deployment enviroments using esp32 devices as well as software level emulations to stress test my algorithms.
- Achieved impressive results in improving the compression ratios in which my contribution decreased network packet size by up to 72%

Undergraduate Teaching Assistant Aug. 2023 – Dec. 2024
Dalhousie University Halifax, NS

- Lead lab teaching assistant, focused on managing the CI/CD pipleines on gitlab used to grade assignment submissions.
- Integrated the use of Bash and YAML scripts to automate administrative tasks, significantly reducing the work load on other teaching assistants.
- Instructed on Systems topics including C programming, basic Computer Architecture and UNIX operations.

Projects

KeBaB | *C++, SDSL Library* Aug. 2024 – Apr. 2025
Paper Code

- K-mer based breaking for finding Super Maximal Exact Matchings in a DNA reference.
- Collaborated with experts to implement improved algorithms used in the identification of certain patterns in the human genome.
- Assisted in the Testing and Debugging of a relativley large code base.
- Evaluated the performance of our implementation.

Dynamic Context Updating in SCHC | *Python3, OpenSCHC, Scapy* Apr. 2024 – Apr. 2025
Paper Code

- Conducted a study that significantly enhanced the performance of an compression protocol
- Introduced a novel dynamic rule updating algorithm for the SCHC protocol and integrated it into existing implementations of the protocol.
- Built an emulation testbed that was used to evaluate performance of the implementation under extereme network stress.

Advanced Data Structures | *GoLang, Python3* Aug. 2023 – Apr. 2024
Contact Code

- Collaborated with a classmate to implement and analyze non trivial data structures.
- Implemented: Splay Trees, Van Emde Boas trees.
- Evaluated performance by stress testing the Data structures and compared results against the theoretical limits.

Technical Skills

Languages: C/C++, Rust, Java, Python3, SQL, JavaScript
Developer Tools: Scapy, Git, Docker, WireShark, Makefile, GDB
Frameworks: Flask, Espresso, JUnit, Nodejs, HTMX, Tailwind
Markup Languages: LaTeX, Markdown, HTML

Awards

First Class Honours: Awarded upon graduation to honours students that maintain a high academic standing

Sexton Scholar: Awarded each semester to students with a 3.85 or higher GPA, achieved in 10 consequitive semesters.

Oman MoHE Scholarship: Awarded to the top performing highschool students in the country, includes 4 years of paid university tuition.