Anas Alhadi

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Education

Dalhousie University Jan. 2021 – May. 2025
Bachelor of Computer Science - First Class Honours, GPA: 3.93/4 Halifax, NS

Experience

John Hopkins University Sep. 2024 – Nov. 2025
Bioinformatics Research Assistant (Publication) Remote

- Accelerated the querying operation of KeBaB, a DNA string matching algorithm, from 60μs to 30μs, by developing a skipping optimization in the core C++ engine.
- Improved CPU utilization of KeBaB's preprocessing stage by 5% through the integration of intel's SIMD operations to the preprocessor's hashing functions.
- Automated all code validation and performance profiling, significantly reducing developer workload and speeding up development cycles by approximatley 20%, by developing a custom Python suite that interfaces with the C++ code to perform unit and integration testing as well as benchmarking and statistical analysis.
- Delivered a complete and tested implementation of KeBaB in under 6 weeks, meeting the deadlines for the journal submission of our research paper.

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

- Improved compression ratios of an IoT networking protocol, SCHC, by up to 20%, through the integration of scheduling algorithms into its rule selection scheme.
- Delivered the improved rule updating support to esp32 devices by integrating the scheduling algorithm into existing implementations of SCHC in the RIOT-OS network stack.
- Automated the configuration of the IoT Lilygo devices on Linux, reducing setup times to a few seconds, through the development of Bash scripts that automatically identify target devices and configure their wireless modules.
- Configured a Linux-based emulation enviroment used to stress test the SCHC modifications, with 1500 different testing scenarios, ensuring a correct and robust implementation.

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

- Automated the setup process of weekly labs, reducing time spent on creating and populating repositories from 5hrs to 10min, by developing Bash scripts that interface with the Gitlab API to perform CRUD operations on student repositories.
- Automated the lab grading process, reducing administrative time from 2hrs to 30$mins$, through the use of python scripts to convert grades retrived of Gitlab API from JSON format to a valid CSV format.
- Led weekly classes for over 100+ students, teaching concepts related to C programming, assembly instructions and discrete mathmatics.

Projects

Live Lyric Translation | *AWS, Docker, NodeJS, Express*

- Designed and launched a SaaS web service that provided realtime lyric translation to songs currently playing on a client's Spotify account.
- Integrated the use of AWS Translate providing universal translation, with background caching of frequently accessed lyrics in S3 buckets, significantly reducing translation costs.

Skills

Languages: C/C++, Python, Rust, Java, JavaScript, SQL, LaTeX, HTML, CSS
Developer Tools: Git, Docker, WireShark, Makefile, AWS, GCP, GDB, Protobuf, Android Studio
Frameworks:, NodeJS, Express, React, Tailwind, CTest, JUnit, PyTest

Awards

Dean's List: Awarded each semester to students with a high GPA; achieved in 10 semesters.

Oman MoHE Scholarship: 4 years of paid university tuition, awarded to the top performing high scool students.