Yousef Al Hashemi

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TECHNICAL SKILLS

C++23, Python, Java, Typescript, TCL, C, Git, Bash, Linux, NestJS, SQL, Makefile, PERL

WORK EXPERIENCE

Intel (Altera) | Software Engineer | July 2023 – Current

- Worked on the compiled IP caching feature, enabling users to accelerate users' design iteration time.
  - Introduced flow-level runtime optimizations and parallelized cache generation achieving a 40% speedup in the cached synthesis flow.
  - Created a testing plan and infrastructure to track and resolve runtime issues in the flow.
  - Polished the feature to production quality through rigorous testing and collaboration with multiple teams.
- Reduced memory usage in GUI use cases by 50%.
  - The benchmark customer designs saved upwards of 6GB of RAM.
  - Stopped the GUI from being unresponsive and frequently freezing.
  - Used memory profiling to trace the issue throught a convoluted event-based flow which doubled the memory.
- Owned and extended the database management system.
  - Found, diagnosed, and replaced faulty concurrency locking mechanism with a more robust and better tested implementation.
  - Improved thread safety and multi-process safety of the system, enabling new multi-process flows.
- Implemented the design partition Preserve feature, enabling users to speed up user design iteration time.
  - Users can block off sections of their designs which meet design requirements save the compilation results.
  - Subsequent compilations with preserved partitions become faster proportional to the amount of the design preserved.
  - Coordinated with other teams across flows to ensure compliance with the feature.
  - Defined and executed testing plan for the feature.
- Owned and extended features for the internal netlist writer.
  - Enabled several production features, is still in active use, and still extended for new use cases.
  - Updated and expanded the writer to allow the output of scripting languages.
  - Directed the development of adding TCL, Python, and VHDL output to the writer.

Questrade | Full Stack Engineer Intern | May 2022 – Aug 2022

- Wrote a REST API endpoint in Typescript with NestJS to fetch information from an internal SQL database.
  - Designed the OpenAPI YAML specification for this endpoint and another in the same domain.
  - Added authentication to ensure users had proper access permissions.
- Investigated dropped messages in the high-speed messaging system.
  - Set up infrastructure to collect relevant statistics.
  - Collaborated with other teams to implement solutions.

Intel | Software Engineering Intern | May 2020 – Aug 2021

- Created the internal netlist writer in C++ which converts internal data structure into hardware code.
  - Used to verify the functional correctness of modifications made to the internal data structure.
- Brought a Python based analytics service online which had been down for 6 months.
- Collaborated on a graph visualization software which took netlist data files and displayed them.
  - Allowed users working with the data files to query custom paths and understand their work better.
- Created a build time script to consolidate and convert legacy XML data into new updated formats.

PROJECT WORK

BlockFund | July 2025 – Current

- Created
- Created the code to solve pathfinding, SLAM, frontier exploration, and serial communication with the drive train.

RoomE - Capstone | Sept 2021 – Mar 2022

- Worked in a team of peers to create an autonomous robot which explores indoor environments, creates maps of them using LIDAR, and uploads them to a website where they could be viewed.
- Created the code to solve pathfinding, SLAM, frontier exploration, create the data model and representation, and serial communication with the drive train.

Automated Clipping Channel | Jun 2019 – Jul 2019

- Wrote a web scraper that finds popular video clips from Twitch.tv and edits them into a 10 minute video.
- Created in Python using Selenium to scrape the dynamic pages, and used FFMPEG to edit the video together.

EDUCATION

Bachelor of Applied Science, Computer Science | McMaster University | Sept 2018 – May 2023

- Cumulative GPA: 11.5/12
- Graduated Summa Cum Laude
- Relevant Coursework: Data structures and Algorithms, Concurrent Systems, Principles of Programming, Databases, Algorithms and Complexity, Intro to Machine Learning, Computer Networks and Security, Operating Systems