

Banin Abrar

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SUMMARY

STRENGTHS

- Proficient in C, C++, JavaScript, Python, Perl, LaTeX, HTML, CSS, Bash.
- Experienced with Git, SVN, RHEL, SIMD and basic familiarity with AWS (EC2 and S3).

INTERESTS

- Backend Development, Algorithm Optimization.

EXPERIENCE

INTEGRATED DEVICE TECHNOLOGY (IDT) | ALGORITHM ENGINEER

JAN 2018 – APR 2018 | WATERLOO, ON

- Improved H.265 encoder's load distribution across CPU cores by implementing Intrinsics on C-code.
- Increased pixel metadata collection speed by a factor of 4, over GCC's default auto-vectorization.
- Analyzed potential benefits of using 512-bit instruction sets in IDT's x86 mainframe.
- Optimized pipeline designs in FPGA using Verilog. Reduced total negative slack by 30 percent.
- Wrote automation scripts to improve SSH compatibility in the internal workflow of the company.
- Completed tasks and projects using Agile Development, through SCM tools, i.e. JIRA.

PROJECTS

F-SEARCH | PYTHON

CURRENT PROJECT

- F-Search is a speed-efficient extended fuzzy search algorithm.
- Generating Trie to map words with frequency of use. Inspired by [Peter Norvig's Research Post](#).
- Improving suggestion accuracy through the use of sequence transposition algorithm.

SMART-CANE | C++

OCT 2017

- Smart-Cane is a walking stick designed for the visually-impaired.
- Simulated a proximity sensor by utilizing data collected from a short-range ultrasonic sensor.
- Automated data collection and implemented an alarm system to warn the user of the cane in case of close proximity to obstacles.
- Generated MIPS compatible instructions through cross-compilation of C++.

EDUCATION

UNIVERSITY OF WATERLOO | CANDIDATE FOR B.A.SC IN HONOURS COMPUTER ENGINEERING

EXPECTED APR 2022 | WATERLOO, ON

- President's Scholarship of Distinction (2017)

RELEVANT COURSEWORK

- Fundamentals of Programming (ECE 150) • Discrete Mathematics and Logic 1 (ECE 108)
- Digital Circuits and Systems (ECE 124) • edX Computer Science (CS50)
- Programming in C++ (New Horizons)