BANIN ABRAR

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SUMMARY

- Experienced with C, C++, Perl, Python, JavaScript; Git, SVN with basic knowledge of AWS
- Interested in backend development, algorithm optimization, systems design

EXPERIENCE

Integrated Device Technology   *Waterloo, ON*
Algorithm Engineer (Performance)   Jan – Apr '18

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

PROJECTS

Smart-Cane   *git.io/f4d9G*

- Team lead in **embedded systems** project, for designing a smart walking-aid
- Implemented an automated, proximity-based warning system using Ultrasonic signal probing
- Generated cross-compiled MIPS instructions for Omega2 chip, through GNU Toolchain

Gitook   *git.io/f4d9Y*

- Designed a git-repository commit handler interface in Perl
- Utilized **Git Templating** to detect and filter undesired changes during commit.
- Automated background checks on local repository through git pre-commit hooks

UltraInstinct   *git.io/f4dhQ*

- Designed an API-based Twitter user analysis program in Flask.
- Implemented automated text mining through Twitter's tweet extraction API
- Utilized IBM's Natural Language Processing API to perform tweet sentiment analysis
- Developed algorithm to generate an overall score for a user from individual sentiment scores

FSearch   *In-Progress*

- Created a speed-efficient extended fuzzy search program.
- Implemented Peter Norvig's Research to efficiently triangulate relevant word candidates.
- Notably improved suggestion accuracy by implementing sequence transposition algorithm

EDUCATION

University of Waterloo   Sept '17 – Apr '22 *(expected)*
Honours Bachelor of Applied Science in Computer Engineering

- 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), Object-Oriented Programming in C++ (New Horizons)

ACTIVITIES

- UW Speedcubing Club, McHacks V (2018), StarterHacks (2018)