Banin Abrar

babrar.github.io — babrar@uwaterloo.ca — in/baninabrar — github.com/babrar

Summary

· Experienced with C, C++, Perl, Python, JavaScript; Git, SVN and working 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 400% 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 possible corrections.
· 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 Rubik's Cube Club, McHacks V (2018), StarterHacks (2018)