Ayan Hafeez

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TECHNICAL SKILLS

Languages: C++, C, Python, JavaScript, HTML/CSS, Racket, PHP

Frameworks / Packages: React, Node.js, Express, Bootstrap, BeautifulSoup4, PROSv5

Developer Tools: Git, MongoDB, MySQL, Postman, Visual Studio, Heroku, LaTeX, Trello, Asana

EXPERIENCE

Full Stack Development Intern Jul. 2021 – Jul. 2021

Digitera Interactive *Ottawa, ON*

- Developed a backend API using Apache, PHP, and MySQL for an event management web application
- Integrated API requests and data flow management into a VueJS frontend in a maintainable, scalable manner
- Optimized database queries and server endpoint code to ameliorate overall performance of the web app
- Implemented testing routines and quality control measures using Postman and Git to improve backend reliability

Lead Software Developer Apr. 2020 – Jul. 2021

2381C VEX Robotics *Ottawa, ON*

- Spearheaded the design and development of autonomous robot control algorithms for the VEX EDR competition
- Developed robot odometry and PID-loop based motion profiling on the PROSv5 architecture using C/C++
- Won the international programming skills challenge for proficient codebase design and excellent implementation
- Placed 7^{th} at the VEX Worlds tournament, received 14+ international awards throughout the season

Co-President Apr. 2020 – Jul. 2021

SET Foundation NPO (Ottawa Division) *Ottawa, ON*

- Served as co-president for the SET Foundation, an NPO oriented towards students in STEM industries
- Led the organization of various live events including hackathons and conferences, reaching 500+ students
- Managed a board of 9 executives while supervising financial, logistical, and internal administrative affairs

PROJECTS

CIFAR-10 Image Classifier | *Python, Tensorflow, Keras* Jan. 2022

- Programmed a multi-class image classifier and trained it on the CIFAR-10 dataset for the UWARG-CV bootcamp
- Constructed a convolutional neural network using modified VGG block structures and automated hyperparameter tuning
- Thoroughly tested viability of final product; visualized success metrics during training and validation cycles

Qi Programming Language Interpreter | *C/C++, Git, UML* Jun. 2021

- Developed a fully-featured five-stage interpreter for a custom programming language using C and C++
- Devised effective lexing, tokenizing, parsing, AST, execution, and memory management modules
- Implemented support for typing, data structures, control flow, functions, I/O, and built-in object methods

CCScraper | *Python, BS4, SQLite* Apr. 2021

- Designed a web scraper app that pulls computer hardware postings to a local database to analyze price fluctuation
- Created a CLI for user parameter input during scraping and parsing process for canadacomputers.com
- Linked driver script to a local SQLite database and automated relevant CRUD operations on scraped data

Quikslide - AI Presentations | *Python, Flask, NLTK, HTML/CSS/JS, Various APIs* Jan. 2021

- Developed a website that converts speech input into multimedia slideshow presentations automatically
- Implemented payload summarization via NLTK and automatic slide generation with the Google Slides API

EDUCATION

University of Waterloo Waterloo, ON

Bachelor of Computer Science (Co-op) *2021 – Expected 2026*

Courses: Designing Functional Programs (Advanced), Elementary Algorithm Design and Data Abstraction (Advanced)