Jayant Bhardwaj

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Skills

Programming Languages C, C++, Java, Python, JavaScript, HTML, CSS, Verilog, Assembly: x86-64, ARM

Frameworks and Tools PyTorch, SciKit-learn, OpenCV, Android Studio, JSON, REST API, Spring Framework, Spring WebFlux, Redis, Mockito, Numpy, Pandas, Flask, Kivy, Git, MATLAB, Google Colab, IntelliJ, Raspberry Pi, Linux/UNIX

Education

University of British Columbia 2018 – Present
Bachelor of Applied Science, Computer Engineering, 4th Year *Vancouver, BC*

Experience

TD Bank May 2022 – Present
Software Engineer Co-op *Toronto, ON*

Royal Bank of Canada (RBC) Sep 2021 – Present
Software Development Engineer (Enterprise Services) *Toronto, ON*

- Worked on microservices using Spring Boot, Redis and Spring Webflux
- Ensured robust RESTful APIs by unit and integration testing and fully mocking dependent services and database

Seahawk Robotics May 2021 – Sep 2021
Software Engineer Intern *Vancouver, BC*

- Developed GUI to accommodate for the sensor upgrades to SeaHawk's multi-domain UAV-based ocean observation system
- Successfully added support for multiple video streams to the UAV's ground control system

Astin Analytics Aug 2020 – Mar 2021
Software Engineer Intern *Vancouver, BC (Remote)*

- Implemented a solution for mass thermal scanning and attendance with a team of developers
- Learnt and worked with the OpenCV, Numpy, Flask and Pandas frameworks
- Developed a web application using Python that displayed the camera feed and attendance
- Developed and maintained automated tests for unit testing using PyUnit

C.O.D.E Hack Hackathon Jul 2020 – Aug 2020
Senior Technical Advisor *Remote Work*

- Established a streamlined system for automating tests and expedite evaluation of the code submitted
- Trained staff to use Git in order to effectively assist participants during the event

UBC Advanced Research Computing (ARC) Summer 2019
Teaching Assistant *Vancouver, BC*

- Learned about the applications of High Performance Computing (HPC) and Digital Research Infrastructure
- Provided assistance to the researchers with command line and Python in order to access the HPC resources

Smarter.Codes Nov 2017 – Dec 2017
Android Developer Intern *Bangalore, India*

- Implemented a chat-bot using REST APIs and JSON
- Parsed the outputs and presented it the form of text and speech using the Android TTS library
- Unit-tested the code for robustness, including edge cases, usability, and general reliability

Projects

MeMeow: ML based Cat Meme Generating Android App

Tools: Android Studio, Java, XML, PyTorch, Sentiment Analysis, Pandas, NLP, Google Colab, Transfer Learning, LSTM/RNNs

- Text Sentiment Analysis model classifies the caption entered by the user and creates a cat meme based on that. Used text embedding to improve efficiency and created an LSTM-based model in order to account for the overall context of the input; achieved validation accuracy in the high 90s
- Image Classifying model recognizes the sentiments of the cat in order to bring you an interesting meme. Used ResNet18 trained on cats and humans using SGD; achieved a high validation accuracy

Development and Extension of OS161

Tools: C, GDB, Linux

- Added features to the OS161 Kernel by implementing process system calls, mutual exclusion and synchronization tools (semaphores) and a virtual memory system in a UNIX-like environment
- Debugged the kernel using GDB
- Created automated unit tests to simulate user programs in C
- Wrote a bash script for automation of compilation and booting of the OS and VM

Mediator Service and Server for Wikipedia

Tools: Java, FSFT Buffer, ANTLR, JSON, JWiki API, IntelliJ

- Implemented a server application that wraps the mediator service capable of processing multiple client requests simultaneously, using JSON to exchange information and ANTLR to parse requests

Debugger for y86-64

Tools: C, Ubuntu, y86-64

- Implemented a GDB-like debugger for y86-64 written in C and y86-64, similar to what GDB does for programs written in C. It supports commands like 'quit', 'step', 'run', 'next', 'jump X', 'Registers', 'Break X' etc.

Weather.io

Tools: HTML, JavaScript, ReactJS, CSS

- The perfect weather widget made using ReactJS and RESTful API integration