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ARCHIT VERMA

Work Summary

Competent Full-Stack Software Developer known for creating inventive solutions, boasting 1.5 years of varied experience. Masterful in C/C++, Java, Kotlin, Python, Django, JavaScript, along with ReactJS, NodeJS, TypeScript, and modern web technologies. Adept in APIs, Docker, and Git, showcasing a strong background in crafting software architectures, enhancing system performance, and improving user interfaces. Possesses robust analytical and troubleshooting capabilities, excels in collaborative environments, and is committed to ongoing education in technological advancements.

Technical Skills

- **Programming Languages:** C/C++, Java, Python, JavaScript, HTML, CSS, Typescript, React, Assembly language (x86), Haskell, Kotlin, XML, Bash, R.
- **Concepts:** OOP, A*, BFS, DFS, MDP, Data Structures, Constraint Problems, Binary Tree, Threads, Semantics, Android Development, Computer vision and graphics.
- **Applications:** Git, Figma, Balsamiq, Android Studio, Docker, Nginx, Postman, Visual Code, MATLAB, Linux environment (Debian, Ubuntu, etc.), Windows, MacOS, Vim, Firebase, ArcGIS.
- **Hardware:** Arduino, Raspberry Pi4, Marlin Firmware, Klipper Firmware.
- **Framework:** Express.js, Node.js, Django, Vue.js, Next.js, Jest, Junit.

Work Experience

Software Engineer (Rapidia Tech Inc.)

- **Part Time** JAN 2023 – MAY 2023
 - Transitioned the back-end API architecture of Rapidia Host V3 from **REST APIs** to **OPENAPIs and Swagger**, ensuring a more efficient and standardized approach.
 - Added new profiles to **Rapidia Slicer** that is integrated with **Cura** using **C/C++**.
 - Developed a **Python-based AI model** that detects metal paste objects, adjusts their flowrate, and analyzes print quality (Good or Bad) in real-time. This aims to reduce pastewastage, enhance print quality, and improve customer experience during the printing process.
 - Participated in weekly progress meetings, managed software documentation, and contributed to project planning.
- **Co-op** JAN 2022 – DEC 2022
 - I worked on the new iteration of **Rapidia Host**, where I transitioned the existing software from **Electron** framework to a **Microservice architecture**, hosted on a **Raspberry pi 4** connected with **Arduino** and **Marlin Firmware**, enhancing performance and efficiency. This redesign involved implementing **Docker**, **Nginx**, and a **REST APIs** structure. I also integrated features like **Gcode** file processing and 3D modeling with **Three.js**. My role included developing various services such as internet connectivity, logging, installation, update service, and additional printer functionalities, ensuring a comprehensive and robust control system for the metal 3D printer software.
 - Implemented the back-end using **Bash Scripts, Express.js, TypeScript, Node.js, Docker, and Nginx**.
 - Implemented the front-end using **Typescript with React.js, Node.js and MUI**.
 - Collaborated with cross functional teams as a Full-Stack Software Engineer to design, develop, and gather the specific requirements to implement and maintain the software. Conducted code reviews and tested the quality. Participated in weekly progress meetings, managed software documentation, and contributed to project planning.

Academic Projects

AI projects

- 3D Reconstruction Project SEPT 2023 – DEC 2023
 - In CMPT 412 (**Intro to Computer Vision**), developed a **Python** framework for 3D reconstruction using epipolar geometry and depth algorithms, with a GUI for epipolar matching, showcasing its use in AR and autonomous navigation.
- PACMAN Game JAN 2023 - APR 2023
 - Used **Python** to **automate**, **optimize**, and **enhance** PACMAN's movements in the game. Implemented various AI algorithms and heuristics learned during the **Introduction to Artificial Intelligence** course at SFU to achieve the highest game scores.

Android Projects

- Sign Language Learning App (Fluent Hands) NOV 2023 - DEC 2023
 - I developed an Android app in **Kotlin**, utilizing the **Mediapipe** framework and XML, to assist users in learning alphabets and forming words in American Sign Language (ASL). In our five-member team, my role included creating the camera activity, learning and result pages and integrating **Mediapipe** for ASL gesture recognition. The app's GitHub repository can be viewed at: [group-18 on GitHub] (<https://github.com/Archity27/group-18>).
 - Website Link: [CMPT362 Project \(google.com\)](https://cmpt362project.com)
- Restaurant Inspector NOV 2020 - DEC 2020
 - Created a Restaurant Review App using **Java**, **Postman**, and **XML** for the course Intro to Software Engineering. The app provides restaurant violations and hazards ratings in Surrey. It includes advanced search, filters, favorites, multilingual support, and Google Maps integration.

Education

Simon Fraser University

JAN 2019 - PRESENT

- Bachelor of Applied Science in Computing Science.
- Expected Graduation: Sept 2024

Interests

- **Computer Vision and AR/VR Implementation:** Exploring the synergy between computer vision and augmented/virtual reality to create immersive and interactive digital experiences across various sectors. Leveraging these technologies to revolutionize fields such as education, healthcare, and entertainment.
- **Game Development:** Passionate about creating immersive and interactive gaming experiences, combining storytelling, gameplay mechanics, and cutting-edge technology.
- **Travelling:** I like to travel to new places and explore cultures. I am a self-proclaimed Xenophile.

Goals

- Aim to develop a unique AR game that fuses real and digital worlds, elevating storytelling and gameplay in digital entertainment.
- Seeking projects in **AI** and **computer graphics**.
- Learn more about computer vision and in the field of human centric AI.

