DEVESH SARDA

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BS Computer Science, University of Washington **Expected Graduation: June 2023**

- CS Courses: The Hardware/Software Interface, Foundations of Computing I & II, Data Structures and Parallelism
- GPA: 3.88/4.0, Minor in Math and Physics: 3D Calculus, Linear Algebra, Waves, Differential Equations

Programming Skills: Java, Python, C/C++, JavaScript/Typescript, C#, SQL

RELEVANT EXPERIENCES

Open-Source Developer **(June 2021 – Present)**

Project - Nylon: Automating Customized Machine Learning Workflows *(June 2021 – July 2021)*

- Speed up the model training pipeline by 15% by implementing Principal Component Analysis (PCA) using sklearn

Project - VS-Mefx: A Composition Analysis Tool for MEF Applications *(July 2021 – Present)*

- Creating a .NET library to diagnose and visualize composition failures in Managed Extensibility Framework parts
- Working with software engineers at Microsoft to integrate VS-Mefx with Microsoft's primary MEF library

Data Analyst at Polling and Open Data Initiative @ UW **(June 2021 – Present)**

- Writing SQL queries to clean and gather insights from data about the City of Seattle's park restoration programs
- Extracting the effectiveness of Big Picture Learning's internship program using NLP tools on student feedback

Undergraduate Researcher at Ubiquitous Computing Lab **(June 2020 – Present)**

Project - Monitoring Heart Health using Smartphone Cameras *(January 2021 – Present)*

- Programmed an Android application to measure blood circulation variation (PPG signal) using camera footage
- Created a system for the application that utilizes binary search to determine camera hardware settings (exposure time, ISO, etc..), which produce an acceptable average image luminosity within 15 to 25 seconds
- Synchronized the data collection time periods for the various cameras using Async Tasks (multithreading)
- Developed library to process PPG signals from dual back cameras simultaneously using the multi-cam API

Project - Ensuring Proper Administration of Rapid Diagnostic Tests *(June 2020 – February 2021)*

- First author of paper: "RDTCheck: A Smartphone App for Monitoring Rapid Diagnostic Test Administration"
- Created computer vision software using OPENCV to automatically track steps involved in medical RDT tests
- Implemented libraries in Android Studio to guide users through the various steps of performing the RDT tests
- Developed a custom algorithm that utilizes color segmentation to measure optical flow to ensure that the sample element has been properly swirled with the buffer solution
- Designed the application to be adaptable to other RDT tests by creating individual modules for each test step, allowing code reuse for common steps across the various test procedures

University of Washington Hyperloop Team **(October 2020 – Present)**

Controls and Software Lead *(June 2021 – Present)*

Lead Developer *(October 2020 – June 2021)*

- Created Arduino library to ensure current and temperature readings are within their nominal ranges
- Implemented software for Teensy microcontroller to measure the wheel's RPM rate using Hall Effect sensors
- Created system to interface the Teensy and the Arduino with the Beaglebone using UART protocol
- Developed a frontend application to display the robot's state using React, which communicates with a backend server, that was hosted by using the Express framework in NodeJS, through RESTful API protocols
- Utilized TCP communication protocol to relay progress and sensor data from the robot to the backend server

AWARDS AND HONORS

- Among 11 teams to qualify to the remote final round of the international *European Hyperloop Week 2021*
- Ranked in the top 10% at the international *Hack-A-Sat 2021 CTF Contest*
- 10th place in Division 2 at *ICPC Pacific Northwest Programming Contest 2021*
- Selected to publish and present "RDTChecker" research paper at *ACM's international CHI 2021 conference*
- Best Use of Google Cloud and Best First Timer Project for accessibility tools in video calls at *DubHacks'20*