VISHVAM MAZUMDAR

Mechatronics Engineering Student

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SKILLS & SUMMARY

- Software: ROS, C++, Python, Linux, JavaScript, AutoCAD, SolidWorks, Unity, MATLAB, Scikit
- Skills & Machines: GD&T, rapid prototyping, drill press, band saw, milling machine, lathe
- Placed 2nd worldwide on NASA Contest and was recognized by Prime Minister of Canada

EXPERIENCE

Software Developer, TRIUMF – May 2018 to Present

- Developed web applications to make it easier for operators to navigate, control and analyze beams
- Used a ***Flask-Python*** framework with an ***EPICS*** environment to perform calculations and manage data
- Displayed graphics and organized frontend using *D3.js*, *Plotly.js,* ***Bootstrap,*** and ***jQuery***

Robotics Research Assistant, SPIN Lab, UBC – May 2018 to Present

- Created prototypes of haptic robots that aim to stimulate emotional responses in humans
- Designed parts on ***Solidworks***, 3d printed parts and used ***Arduino*** microcontrollers to move robot
- Analyzed touch data from test subjects who interacted with the robot using *neural networks* and *SVMs* to establish a relationship between areas touched, motor speeds, and haptic response

University of Waterloo Robotics Team – Sep 2017 to April 2018

- Dimensioned various ***SolidWorks*** parts and ***AutoCAD*** drawings and machined them for robot
- Programmed unstuck algorithm for UW rover using ***ROS*** with ***Python*** and ***C++*** on ***Linux***
- Wrote low-level firmware with ***C++*** to control movement and read sensor data on embedded systems
- Built a line following, music playing robot with self-made audio circuit that placed 3rd for intro challenge

Software Engineer, Yaar – June 2017 to August 2017

- Programmed entire company website (yaar.ai) with ***HTML, CSS***, ***JavaScript***, JS libraries (e,g, ***jQuery***)
- Organized and developed the frontend of the internal dashboard with ***ReactJS*** and ***SASS***
- Developed the backend of the internal dashboard with ***SQL*** and ***NodeJS*** in a ***Django*** framework
- Processed images used to train image processing system using ***Scikit*** and ***OpenCV*** on ***Python***

PROJECTS AND ACTIVITIES

Engineering Club President and Founder – Dec 2016 to June 2017

- Taught over 40 students ***Java*** along with algorithms and structures in preparation for CCC
- Taught students ***Autodesk***, 3D printing, and ***Arduino*** to compete in RobOlympics

FRC Robotics Mechanical Systems Lead – Sep 2013 to June 2016

- Designed large robots to compete in various games and challenges using ***Autodesk Inventor***
- Worked with pneumatic systems, large 3D printers, motors, gears, sensors, various machines

ACHIEVEMENTS

NASA Space Settlement Contest – 2nd Place in the World

- Designed space settlement that can support 10,000 with detailed plans for energy, basic needs, R&D, etc.
- Competed against over 6000 students across the world
- Received letters of congratulations from Prime Minister Justin Trudeau and President of the CSA

Top Student in Peel District with 100% gr. 12 average

1st Place University of Waterloo Mechatronics Competition

EDUCATION

University of Waterloo, Candidate for BASC in Mechatronics Engineering – Class of 2022

- Key Courses: Algorithms and Data Structures, Digital Computation, Circuits – 4.0/4.0 Cumulative GPA
- Key Content: OOP, Real-Time Programming, ***MATLAB***, ***SolidWorks***, ***AutoCAD***, GD&T, Robotic Arm