SHARWIN PATIL

Co–op/Internship Availability: July – December 2023

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EDUCATION

Northeastern University | Candidate for Bachelor of Science in Computer Engineering & Computer Science, Minor in Robotics

Expected Graduation: 05/2024 — Boston, MA

- GPA: 3.6, Dean's List (all semesters)
- Relevant Courses: Object Oriented Design, Algorithms and Data, Computer Systems, Embedded Design: Enabling Robotics, Circuits and Signals: Biomedical Applications, Robot Dynamics and Control.
- Fundamental Courses: Computer Science (II), Electronics, Digital Design and Computer Organization, Networks, Cornerstone of Engineering, Calculus (III), Differential Equations & Linear Algebra.
- Activities: NURobotics Club Project Lead and Lead Intro Course Instructor, Club Water Polo Vice President. First-year Engineering Tutor.

Dougherty Valley High School

06/2019 — San Ramon, CA

- Activities: Vex Robotics Competition (VRC) (Team Captain and Lead Design/Build), Led VRC team to Vex Robotics World Championship in 2018 & 2019. Varsity Water Polo (Captain).

EXPERIENCE

Fulfil Solutions Inc | Incoming Robotics Software Controls Co–op

07/2022 – 12/2022 — Redwood City, CA

Doble Engineering | Software Engineering Co–op

07/2021 – 12/2021 — Marlborough, MA

- Developed an external data persistence mechanism in C# with the .NET framework, designed to handle I/O management, to be inserted into various Doble propietary software products.
- Designed and deployed an installation wizard using Windows Presentation Foundation (WPF) for updating firmware on Doble instruments.
- Maintained software products in an Agile project management environment.

Northeastern University | First-Year Engineering Tutor

01/2021 – Present — Boston, MA

- Tutor first-year students in SolidWorks, C++, AutoCAD, MATLAB, and Arduino.
- Assist students with projects utilizing workshop machines (Bandsaw, Laser Cutter, 3D Printers).
- Member of FYELIC Advisory team, which guides and aids prospective FYELIC tutors.

Dougherty Valley Robotics Club | Team Captain & Summer Camp Mentor

09/2015 – 06/2019 — San Ramon, CA

- Drove the design, engineering and fabrication process for a competitive robot that was able to interact with physical objects and perform tasks.
- Wrote robot micro-controller in C++ for the control system.
- Documented and recorded the engineering process to present to judges at tournaments.
- Developed a curriculum to teach 30 middle school students the fundamentals of robotics with the VEXIQ system, students were ultimately able to construct and program a robot capable of completing multiple tasks and compete against other teams.

AWARDS

BSA Eagle Scout | VRC CA State Champion 2018 & 2019 | VRC Awards (17x) | Varsity Water Polo MVP 2018 & 2019

SKILLS

Java | C/C++/C# | Python | Linux | Arduino | MATLAB | SolidWorks | LaTeX | 3D Printing | Lisp

PROJECTS

Image Manipulator in Java |

06/2021

CS3500: Object-Oriented Design

- Developed a Java project to apply manipulations and enhancements to images and export them as various file types.
- Utilized a highly Object-Oriented approach using the Model-View-Controller design pattern for improved extendibility and ease of modification.
- Collaborated with a classmate and utilized a GitHub repository to document the workflow.

Chess Robot |

03/2021 – 05/2022

NURobotics Club

- Constructed a X/Y Plotter with a modified manipulator to interact with custom chess pieces. Built with custom-designed, 3D printed parts using SolidWorks and Prusa 3D Printers.
- Implemented Arduino and Rasberry Pi components to read the board state using Computer Vision, control stepper motors, and display information to the user.
- Incorporate a Chess AI to play against a human player.

Autonomous Swarm Marine Robots |

04/2022 — Atlanta, GA

RoboTech 2022 Hackathon Submission

- Created a graphical simulation in Python for a swarm of aquatic drones tasked with cleaning algal blooms within a body of water utilizing path-finding algorithms.
- Implemented A* Search to generate paths for each drone to optimize the aglae coverage for each drone.
- Included an RRT inspired algorithm to generate random paths for each drone based on a set of constraints.

Excel To LaTeX Converter |

12/2020

Personal Project

- Created a Python script to accept user input of copied Excel cells and convert to source code for a LaTeX table.