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

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 – Present

NURobotics Club

- Construct a X/Y Plotter with a modified manipulator to interact with chess pieces.
- Implement Arduino and Rasberry Pi components to read the board state, control motors, and display information to the user.
- Design custom chess pieces and parts for the X/Y Plotter utilizing a 3D Printer.
- Incorporate a Chess AI to play against a human player.

Autonomous Swarm Cleaning Robots |

📅 04/2022   📍 Atlanta, GA

RoboTech 2022 Hackathon Submission

- Created a simulation for swarm of aquatic drones tasked with cleaning algal blooms within a body of water utilizing path-finding algorithms in Python
- Implemented A* Search for multi-agent path-finding as well as RRT to generate paths for each drone

Excel To LaTeX Converter |

📅 12/2020

- Developed Python script to accept user input of copied Excel cells and convert to source code for a LaTeX table.
- Implemented user input to allow for improved utility and customization of the table's settings.