SHARWIN PATIL

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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.
- Fundamental Courses: Computer Science (II), Electronics, Digital Design, Networks, Cornerstone of Engineering, Calculus (III), Differential Equations & Linear Algebra.
- Activities: NURobotics Club Project Lead and 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 subsystem handling data and I/O management, to be inserted into various software products.
- Implemented a firmware-updater application for propietary company instruments.
- Adjusted to using a WSL bash shell running Ubuntu to manage projects on source control. Created custom aliases and scripts to improve productivity.

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.

Chabot Space & Science Center | Volunteer Lab Demonstrator

06/2015 – 09/2019 — Oakland, CA

- Explained science concepts to young kids utilizing experiments and demos.
- Taught young students the scientific method and methodology when conducting experiments.
- Answered many questions from kids and adults alike about various concepts and the science field in general.

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 | AutoCAD | LaTeX | 3D Printing

PROJECTS

Image Processor 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.

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.

Interactive Chess in Java |

09/2021 – Present

- Developing a command-line application in Java to play Chess with textual prompts and input.
- Designing with an emphasis on extendibility using the Model-View-Controller design pattern. Currently implementing a textual view with plans to later introduce a graphical interface and view.

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.