SHARWIN PATIL

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EDUCATION

Northwestern University | M.S. in Robotics
- 📅 Expected Graduation: 12/2025   📍 Chicago, IL
- Relevant Courses: ROS, Robotic Manipulation, Dynamics, Machine Learning

Northeastern University | B.S. in Computer Engineering & Computer Science, Minor in Robotics
- 📅 Graduated: 05/2024   📍 Boston, MA
- GPA: 3.6, Dean's List (all semesters)
- Lead Intro Course Instructor for NEU Robotics Club, Club Water Polo President, TA for Robot Dynamics & Control.

EXPERIENCE

GreenSight | UAV Robotics Engineer Co–op
- 📅 06/2023 – 12/2023   📍 Boston, MA
- Developed RTOS firmware for communications between a swarm of nano-drones and GCS over LoRa.
- Implemented a Hardware-Abstraction-Layer (HAL) in C for the ESP32 platform to interface with a custom LoRa chipset.

Fulfil Solutions Inc. | Robotics Software Controls Co–op
- 📅 07/2022 – 12/2022   📍 Redwood City, CA
- Developed sequencing code in C# for high-level behavior planning and task assignment for heterogeneous robotic agents.
- Composed data fetching functions to bridge C# sequencing code to MongoDB.
- Optimized AGV planning and curated heuristics for maintaining the factory's health while improving performace.
- Deployed factory-wide alerts and notifications for operators to react with relevant safety measures.

Doble Engineering | Software Engineering Co–op
- 📅 07/2021 – 12/2021   📍 Marlborough, MA
- Developed an external data persistence mechanism in C# running on the .NET framework for various Doble software products.
- Designed and deployed a firmware installation wizard using Windows Presentation Foundation (WPF) for Doble instruments.

PROJECTS

Automated Poker Table | ⓞ
- 📅 01/2023 – 04/2023
- Designed a sensor-driven automated shuffler and card dealer with high repeatability.
- Developed firmware for I2C and Serial communications between STM32 microcontrollers and a Raspberry Pi.
- Delivered a complete and sophisticated system, awarding us first place for Northeastern's ECE Capstone 2023.

AGV Motion-Planning | ⓞ
- 📅 09/2022 – 12/2022
- Implemented Odometry from scratch in C++ with multithreading to asynchronously compute the robot's absolute pose.
- Designed a trajectory generator using Hermite splines and Bezier curves.

Robot Arm Educational Kit | ⓞ
- 📅 05/2022 – 05/2024
- Designed a 3-link planar robotic manipulator as an educational tool for students learning the kinematics and dynamics of manipulators.
- Developed custom libraries in C++ for students with little coding experience to program movements and perform trajectory planning.
- Collaborated with professor Rifat Sipahi to package the robot arm into a kit for the course ME3460: Robotic Dynamics and Control.

Chess Robot | ⓞ
- 📅 03/2021 – 05/2022
- Designed a 3-axis gantry system in SolidWorks with an end-effector to grab custom chess pieces.
- Implemented a custom serial interface between a Raspberry Pi and Arduino devices using command messages to perform low-level tasks.

SKILLS

Embedded C | C++ | Python | C# | Java | Linux | Git | Unity | ROS/ROS2 | MATLAB | SolidWorks (CSWA) | KiCad