Jessi Jha

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Education

August 2021 - May 2025

University of Pennsylvania | School of Engineering and Applied Science | Philadelphia, PA **Degree:** *Bachelor of Science in Engineering – Exp May 2025* | **Major**: Electrical Engineering | **GPA**: 3.62/4.0 **Honors/Awards**: Clark Scholar; Hispanic Scholarship Fund Scholar; Questbridge Scholar; Society of Hispanic Professional Engineering (SHPE) Member

Experience

Jun 2024 - Aug 2024

University of Pennsylvania GRASP Laboratory - ModLab | Philadelphia, PA— *Research Assistant*

- Contributed to SMORES-EP project by updating embedded electronics for a modular robot with parallel assembly
- Researched and tested Linux-based microcontrollers and cameras for motor, LED, and input control.
- Assisted in constructing electro-permanent magnets, essential for modular robot reconfiguration.

Jan 2023 - Present

University of Pennsylvania Electrical and Systems Engineering | Philadelphia, PA— *Teaching Assistant*

- Demonstrated laboratory experiments and techniques to students, promoting safe and effective scientific practices and encouraging critical thinking and problem-solving skills.
- Communicated regularly with the instructor and course staff to address student concerns and collaborate on course logistics and improvements.

May 2023 - Aug 2023

Columbia University Nevis Labs REU | New York, New York City — *Research Assistant*

- Developed and implemented C++ BDT models to effectively distinguish signal-displaced electrons.
- Engineered a C++ script for BDT model evaluation, providing statistical insights and data-driven assessments.
- Applied hyperparameter optimization and rigorous cross-validation to fine-tune BDT models for reliable signal-background discrimination.
- Conducted comparative analysis to select the optimal machine learning tool for the final analysis of BDT models.

May 2022 - Aug 2022

Google/Alphabet Inc. | Seattle, WA— *STEP Intern*

- Developed a successful C++ bot for Google's codebase, effectively optimizing code reviews for my SRE team
- Engineered SQL scripts to streamline check development by analyzing data from 35M+ commits.
- Authored a design document outlining the bot's integration and presented its impact on code review efficiency to the team and senior management.
- Proactively attended machine learning seminars to stay updated on emerging technologies.

Projects

December 2024

Langmates: Collaborated with a team of five to develop an interactive language learning web application, integrating real-time audio chatbots and foundational language modules; utilized React, GPT APIs, and TypeScript.

December 2024

OptiGrow: Developed a cutting-edge plant-watering system that leveraged an image classification neural network with TensorFlow and Keras APIs to accurately identify flowers and allocate precise amounts of water to each plant.

May 2024

Metal Detector: Developed analog circuitry including LC circuit oscillators, frequency mixers, current mirrors, CD amplifiers, and CS amplifiers and filters, to create the circuitry for a metal detector. Utilized Altium to lay out the PCB.

April 2024

RoboWave Robotic Arm: Developed a glove-robotic arm system with flex sensors and an accelerometer, transmitting data via I2C and Wi-Fi. Atmega328PB programmed in Bare Metal C controlled the robotic arm based on sensor inputs.

October 2023

Rapidly-Expanding Random Tree (RRT) Algorithm: Implemented a Rapidly-Expanding Random Tree (RRT) algorithm in Arduino C++ to optimize path planning and navigation for a ROMI bot.

April 2022

Twitter Bot AI: Developed a dynamic Twitter Bot in Java that utilized a Markov Chain model and iterators to generate engaging and relevant tweets for users.

Leadership/Extracurricular Activities

May 2024 - PRESENT

University of Pennsylvania Kislak Center for Rare Books and Manuscripts | Community Projects Assistant

- Develops and researches blog posts on Kislak Center archives, creating comprehensive articles.
- Promotes digital and traditional archiving techniques, including resources for archival website development.
- Assists oral history projects with prominent Philadelphia artists, activists, and intellectuals.

Aug 2022 - PRESENT

University of Pennsylvania College Houses & Academic Services | Residential Advisor

- Organized community events on a $200 monthly budget, showcasing organizational skills and attention to detail.
- Provided guidance and support academically, socially, and emotionally to 42 college freshman

Skills

Software: Java, Python, C, OCaml, Root, C++, SQL, MatLab, Linux OS, Simulink, Solidworks, Altium, Cadence
Languages: Spanish (Advanced Proficiency), French (Conversational Proficiency), Arabic (Elementary Proficiency)