

Joseph Huang

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Education

Purdue University, MS in Electrical and Computer Engineering Jan 2025 - Dec 2025

- Research Focus in Computer Vision and Image/Signal Processing

Purdue University, BS in Computer Engineering Aug 2021 - Dec 2024

- GPA: 3.86, Deans List and Semester Honors every semester

Experience

Graduate Research Assistant, Purdue University - West Lafayette, IN Jan 2025 - Present

- Developing a machine learning pipeline to automatically detect contamination on surgical equipment from images
- Designing an autoencoder-based model for reconstructing images and detecting defects in surgical instruments
- Researching and implementing data augmentation techniques to simulate irregularities in images

Software Engineer Intern, Siemens Digital Industries Software - Fremont, CA May 2024 - Aug 2024

- Developed Python scripts to automate compilations of large SoC (System on a Chip) designs
- Implemented a user interface with 4 different types of interactive plots and tables to visualize analytics from compilations
- Deployed project on designs from 4 major semiconductor companies, streamlining workflows across 4+ projects

Software Engineer Intern, Kinze Electronics - North Liberty, IA May 2023 - Dec 2023

- Worked in an Agile team of 6 developers to develop a mobile app for controlling all Kinze high-tech planters
- Designed and implemented 10+ UI features, including an all-new orifice selection tool, enhancing user experience
- Identified and fixed 50+ bugs ranging from visual issues to functionality issues
- Conducted 2 rounds of rigorous manual testing before software releases to ensure stability and performance

Undergraduate Teaching Assistant, Purdue University - West Lafayette, IN Jan 2022 - Dec 2024

- Held regular office hours and graded students' assignments, taught lab sections with 30+ students weekly
- Developed auto-grading scripts in Python to streamline grading process
- Courses: ECE 570 (Artificial Intelligence), ECE 362 (Microprocessor Systems and Interfacing), ECE 270 (Digital System Design), ECE 20875 (Python for Data Science), CS 159 (C Programming)

Projects

Resistor Analyzer Jan 2024 - Dec 2024

- Led a team in developing an Android app that identifies resistor values from images, streamlining the resistor identification process
- Implemented a custom k-nearest neighbors algorithm to accurately classify resistor band colors, achieving 92%+ classification accuracy

Plant Identification Aug 2022 - May 2023

- Developed an Android application capable of identifying 5 different plant species, enhancing accessibility
- Implemented YOLO algorithm to precisely segment and classify plants from real-world images, reaching 98%+ accuracy

Business Card Reader Jan 2022 - May 2022

- Collaborated on an Android app that automates contact entry by extracting text from business cards and adding details to a phone's contact list

Skills

Programming Languages: Python, Java, C/C++, PHP, HTML/CSS, JavaScript, SQL

Technologies: Linux, LaTeX, Microsoft Office, Git, Agile