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 to visualize analytics from compilations using interactive plots and tables
- 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 to develop a mobile app for controlling all Kinze high-tech planters
- Designed and implemented new UI features, including an all-new orifice selection tool, enhancing user experience
- Identified and fixed bugs ranging from visual issues to functionality issues
- Conducted rigorous 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 to develop an Android mobile app that could identify the resistance of a resistor in an image
- Wrote k-nearest neighbors algorithm to classify colors of resistor bands

Plant Identification   Aug 2022 - May 2023
- Worked with team to develop an application for Android mobile devices that could identify different plants
- Implemented YOLO algorithm to segment and classify plants in an image

Business Card Reader   Jan 2022 - May 2022
- Collaborated with team to develop an Android app that read a business card and added the info to contacts
- Created a convolutional neural network to classify text on the business card

Skills

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

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

Soft Skills: Time management, teamwork, problem-solving, documentation