Joshua Chiang

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Education

University of Wisconsin - Madison **Sep 2023 – Present**

Major: Electrical Engineering, B.S. | Graduation: Spring 2027

Dean's Honor List, 2 semesters | GPA: 3.200

Experiences

The Jacobberger Group - Madison, WI **2025 Jun – Present**

Undergraduate Researcher

- Conducted systematic X-ray Photoelectron Spectroscopy (XPS) analysis on silicon-graphene layers to test various passivation techniques
- Processed and analyzed XPS spectra data using MATLAB, compiled data visuals in Origin
- Summarized experimental findings and presented results in group meetings, contributing to ongoing discussions on materials selection and device architecture

HL Display Ltd. & Holo General Equipment Ltd. - Hong Kong **2024 Jun – 2024 Aug**

Electronics Engineer

- Interpreted electrical schematics for the assembly and wiring of electronics
- Designed and constructed copper core 3-watt PCBs for the manufacturing of a color-changing LED product
- Debugged circuit designs using electronic hardware, including oscilloscopes and multimeters

TuringSense, Inc. - Santa Clara, CA **Jun 2022 – Jul 2022**

Electrical Engineering Intern

- Assisted in the development and iteration of electrical and mechanical schematics of an exosuit prototype
- Integrated multi-sensor data streams (3D motion data from 6-axis IMUs) using proprietary sensor fusion algorithms to enable real-time, camera-less 3D motion capture for biomechanics applications
- Implemented edge impulse-based machine learning models on C++ to distinguish flexion/extension movements for physical posture analysis

National Science Foundation **2020 – Present**

ML Trainer (Volunteer)

- Completed 9,000+ data classifications, such as analyzing images from the ATLAS inner detector for displaced vertices, identifying biological structures in microscopic images, and transcribing hospital records

Extracurricular Activities/Projects

Wisconsin Autonomous - Madison, WI **2025 Jan – Present**

Hardware Engineer

- Placed 2nd overall in the Year 4 SAE Autodrive Challenge (2025)
- Developed comprehensive testing environments and scenarios to validate autonomous driving capabilities with the team, leading to a 212% improvement in Systems Safety score vs. Year 3
- Plotted electrical wiring diagram with hardware team for autonomous blue light operation (blue lights on the vehicle are turned on to indicate autonomous mode) using Altium
- Designed object mounts for obstacles used in vehicle testing and sensor mounts using AutoCAD and SolidWorks

Design Practicum - Madison, WI **Sep 2023 – Dec 2023**

Head Programmer & Library Researcher

- Collaborated with student engineers to design and develop a door sensor for UW Madison's fabrication facilities
- Coded the motion sensing function in Python for the visitor counter
- Achieved 98% accuracy in a sample of 194 subjects
- Designed camera mount with team in SolidWorks (Final Poster)

Selected Proficiencies

- Native fluency in reading and writing Chinese
- Software/coding: MATLAB | Python | JAVA | AutoCAD | SolidWorks | Origin | Avantage | LTSpice | Altium | Assembly | Verilog | C++ | Linux | Git | Web development | Adobe Creative Cloud | BLAST | Microsoft Office |
- Lab skills/instruments: X-ray photoelectron spectroscopy (XPS) | Arduino and breadboards | Raspberry Pi | PCB design