Jolie Lai

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EDUCATION

Purdue University – West Lafayette   Aug 2024 – May 2028
Bachelor of Science in Mechanical Engineering   *[3.53/4.00]*

WORK EXPERIENCE

Engineering Intern   May 2025 – Jul 2025
Multiscale Medical Robotics Center   *Hong Kong SAR*
  ∗ Reviewed academic literature to determine wind tunnel dimensions, ensuring quality airflow
  ∗ Designed 6 components in Fusion360 and analyzed airflow on ANSYS.
  ∗ Improved jig design with 5+ iterations to fulfill print-in-place requirement

Aerodynamics Intern   Jul 2023 – Aug 2023
Hong Kong University of Science and Technology   *Hong Kong SAR*
  ∗ Engineered 8 aerodynamic models and increased lab productivity by 30% through assisting other members.
  ∗ Performed CFD using SolidWorks to ensure quality air flow on engineered models

EXTRACURRICULAR ACTIVITIES

Wood Shop Peer Mentor   Feb 2025 – Present
Purdue Bechtel Innovation Design Center   *West Lafayette, IN*
  ∗ Oversee and inspect CAM programs and CAD models to ensure efficiency and feasibility
  ∗ Provided consulting services to 100+ Purdue students on project workflow, material and tool selection
  ∗ Developing clear, updated Standard Operation Procedures to improve training and safety
  ∗ Spearheading nightstand manufacturing workshop curriculum

Aerodynamics Team Member   Aug 2024 – Present
Purdue Electric Racing   *West Lafayette, IN*
  ∗ Designing and iterating 2026 racecar vehicle undertray and analyzing flow on ANSYS Fluent
  ∗ Created rear wing components with Siemens NX and assisted with manufacturing for previous 2025 vehicle
  ∗ Devised mounting methodologies for rear wing, resulting in reduced manufacturing time and increased stability
  ∗ Assisted with the manufacturing of 10+ molds and 20+ components in the 2024-2025 season

Undergraduate Research Assistant   Aug 2025 – Dec 2025
Pan Lab - Microscale 3D Printing Tool Implementation   *West Lafayette, IN*
  ∗ Utilized LabVIEW to create new features for microscale 3D printer
  ∗ Constructed algorithms with Python for gcode parsing and STL file slicing

PROJECTS

Desk Organizer | *Autodesk Fusion, AutoCAD*   Sep 2025 – Dec 2025
  ∗ Developed CAM program for slotting and engraving operations on ShopSabre gantry
  ∗ Created CAD models and engineering drawings compliant with ASME Y14.5 standards.
  ∗ Prepared precise DXF files for laser cutting acrylic and plywood materials.
  ∗ Performed DFA analysis and generated BOMs, streamlining manufacturing and assembly processes.

TECHNICAL SKILLS

Languages: Python, MATLAB, JavaScript, HTML, CSS
CAD: Siemens NX (Unigraphics), SolidWorks, Autodesk Fusion (CAD, CAM, FEA), ANSYS Fluent, AutoCAD
Engineering: DFM/DFA, GD&T (ASME Y14.5), BOM Generation, LabVIEW
Manufacturing: CNC machinery operations, CAM programming, 3D printing, Power Hand Tools, Soldering
Microsoft Office Suite: Word, PowerPoint, Excel