

# Gilbert Chang

U.S. Citizen | (925)-444-5802 | [chang940@purdue.edu](mailto:chang940@purdue.edu) | [linkedin.com/in/gilchang](https://www.linkedin.com/in/gilchang) | [github.com/vindou](https://github.com/vindou)

## EDUCATION

---

### Purdue University

*Bachelor of Science in Mechanical Engineering, Computer Science*

**Minors:** ECE, Mathematics

**Relevant Coursework:** Machine Design, Statics, Mechanics of Materials, Heat and Mass Transfer, Thermodynamics, Fluid Mechanics, Measurement and Control Systems II, Signals and Systems, Electrical Engineering Fundamentals II

West Lafayette, IN

Aug. 2023 – May 2027

## EXPERIENCE

---

### Mechanical Engineering Intern

*Persona AI*

### Undergraduate Research Assistant

*Cai Group at Herrick Laboratories*

- Conducting system identification on a dual psychrometric chamber system using MATLAB Control Systems Toolbox, convex optimization, and neural networks to analyze lumped-element model errors.
- Developing workflows for system identification and pole placement to optimize controllers for energy-efficient heat pumps.

### Undergraduate Research Assistant

*Computational Motion, Manipulation, and Autonomy Lab at Purdue University*

- Engineered a soft robotic gripper using FinRay geometries for the Franka Research 3, employing FEA to predict structural deformation and optimize manipulation precision.
- Designing pneumatic soft end-effectors with integrated tactile sensing to improve robotic adaptability and object interaction.

May 2025 – August 2025

Houston, TX

January 2025 – Present

West Lafayette, IN

November 2024 – Present

West Lafayette, IN

## PROJECTS

---

### Supersonic Sounding Rocket Active Fin Control Module

- Designed a high-DOF linkage system using SolidWorks, establishing parametric workflows for rapid iteration, and enabling precise servo motor control of canards.
- Analyzed rocket stability, overall coefficient of drag, and mechanical stresses utilizing Ansys Fluent simulations.
- Performed structural FEA in Ansys Mechanical and hand calculations to analyze component deformation and mechanical stresses, informing material choices under aerodynamic and launch loads.
- Applied DFM and DFA principles to reduce the overall module cost by 80%.

### High Altitude Solid Rocket Motor

- Designed a 44kNs solid rocket motor with 210s Isp in Onshape; developed parametric workflows and nozzle geometry optimization using OpenMotor, achieving 98% ideal thrust coefficient.
- Conducted structural analysis with Ansys Mechanical and hand calculations, enforcing a factor of safety of 3.5 for critical load-bearing components.
- Developed ignition electronics using KiCad, optimizing for robust system integration and sensor calibration under noisy conditions.
- Leveraged DFM principles for nozzle, bulkhead, and testing stands, ensuring manufacturability on 5-axis CNC mills.

January 2025 – May 2025

November 2024 – January 2025

## TECHNICAL SKILLS

---

**Design & Analysis:** Onshape, Siemens NX, SolidWorks, Autodesk Inventor, Ansys Mechanical, Ansys Fluent, KiCad

**Materials & Manufacturing:** Composites (VARTM, forged), GD&T, DFM/DFA, Tolerance Stack-ups

**Simulation & Control:** FEA, CFD, MATLAB, Simulink, ROS2, Python, C, C++, Java, NumPy, Pandas, Matplotlib

**Prototyping & Testing:** 3D Printing, Laser Cutting, Vacuum Forming, Manual & CNC Mills/Lathes, Bandsaws