Justin Chang Stauffer

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EDUCATION

Northwestern University*, *Evanston, IL Jun 2025
Bachelor of Science in Mechanical Engineering, Concentration in Design Major GPA: 3.8/4.0

SKILLS

Technical: Matlab, Python, CAD (NX, Solidworks, AutoCAD, slicer), CAM & manufacturing (CNC mill, sand casting, injection molding, laser cutter, waterjet), Ansys, prototyping, 3D printing, Microsoft Office, life cycle analysis, diagramming, raspberry pi
Soft skills: problem solving, user-centered design, communication, collaboration, organization, leadership, adaptability
Extracurricular: Chinese (intermediate); music performance, teaching, & competition (cello, piano, erhu)

DESIGN PROJECTS

Capstone Project: Adaptive Injection Molding System *Jan 2025-Jun 2025*

- Redesigned injection molding using sheet metal-based mold to reduce cost and time spent compared to traditional molds
- Manufactured and tested adaptive injection molding system to support and eject part from various sheet metal liners
- Performed flow analysis of cooling fluid; integrated modular cooling system to optimize temperature for any geometry
- Managed project timelines, coordinated tasks to meet biweekly deadlines; worked with client to ensure stakeholder needs
- Combined three systems into final working product; created plans for implementation into industry

Medical Device Design: Embolization Coil *Jan 2025-Mar 2025*

- Designed, tested, and manufactured prototype embolization coil in compliance with FDA and EU regulations
- Consulted medical professionals to determine pain points of current process and opportunities for improvement
- Developed risk management, verification, and clinical trial documentation to support product validation
- Applied medical usability engineering principles and selected materials based on biocompatibility cost, and safety

User Design Challenge: BotaniPal *Mar 2024-Jun 2024*

- Iteratively ideated, designed, and prototyped product to increase user interaction with houseplants
- Performed field research on target users and market analysis of current products to determine gaps in market

Product Life Cycle Analysis: Calyx Helmet *Jan 2024-Mar 2024*

- Conducted cradle-to-gate product life cycle analysis of Calyx helmet production to evaluate environmental impacts
- Recommended solutions to design team to reduce environmental impacts of industrial production based on study

Industrial Design Sustainability: Children's Toy *Sep 2023-Dec 2023*

- Designed and laser-cut environmentally friendly cardboard children's toy truck to replace current plastic toys
- Designed CAD model to optimize size and shape for efficient industrial-scale manufacturing and packing

WORK EXPERIENCE

Teaching Assistant, Mechanical Engineering Dynamic Systems *Jun 2024-Dec 2024*

- Improved and restructured 300-level course; Synthesized higher level material into student-oriented textbook
- Taught 90 students; Incorporated design principles to understand and address root causes of students' problems
- Communicated difficult concepts in multiple ways tailored to help develop each student's individual understanding
- Held optional supplemental lectures; Worked with students one-on-one 12+ hours weekly

Northwestern Team, NASA BIG Idea Challenge *Oct 2022-Aug 2024*

- Developed technology pertaining to permanent lunar settlement; Systems Engineering award 2023, Artemis Award 2024
- Led team developing parabolic mirrors, improving material and process efficiency for interplanetary transport
- Designed inflatable metal structures for cryogenic fluid storage; tested forces on different geometries using Ansys FEA
- Cooperated with industry manufacturers; collaborated with cross-functional team members on multiple sub-teams
- Met internal and external deadlines in fast-paced environment; Identified and prioritized key tasks for efficient progress

Intern, Just Design LLC, Chicago, IL *Jun 2021-Sep 2022*

- Carved detailed wax molds by hand and designed fine jewelry based on client specifications and preferences
- Created CAD models and 3D printed prototypes for client feedback, ensuring sizing and satisfaction before finalizing
- Managed workflow and prioritized work based on demand to fulfill all orders efficiently