

RUHAAN JAIN

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EDUCATION

University of Illinois Urbana-Champaign
Bachelor of Science in Mechanical Engineering

Expected May 2028
GPA: 3.93/4.00

Related Coursework:

Design for Manufacturing Intro to Turning Thermodynamics Statics Linear Algebra

TECHNICAL SKILLS

Data Analysis & Computation: Python, Excel, Jupyter Notebook, Google Colab, ML & AI, TensorFlow, sklearn, OpenCV
Applications: Fusion 360, NX, SolidWorks, Ansys, Creo, Cura, Word, PowerPoint, ImageJ
Manufacturing: 3D Printing, GD&T, Lathe

WORK EXPERIENCE

Energy Transport Research Laboratory

Undergraduate Research Assistant

Champaign, IL
Sep 2025 – Present

- Designed and implemented a Python-OpenCV computer vision pipeline to detect and reconstruct 3D flow boiling bubble geometries from 2D images.
- Achieved less than 2% volumetric error, Automated 95% of image analysis.

SIGRobotics @ UIUC

Hardware Group Mechanical Lead

Champaign, IL
Sep 2025 – Present

- Leading a 4-person sub team designing a wall-climbing robot inspired by Disney/ETH Zurich's *Vertigo*.
- Owned mechanical design and rapid prototyping in Fusion 360 (transitioning to Siemens NX), with planned thrust testing for design validation.

Illini Electric Motorsports

Brake Systems Engineer

Champaign, IL
Sep 2025 – Jan 2026

- Designed and analyzed FSAE brake rotors in Creo using AR500 and G3000 materials; developed detailed material models and validated performance through ANSYS stress simulations.
- Optimized rotor cooling design by improving airflow and reducing steady-state temperature from 500°F to 400°F, enhancing durability under sustained braking loads.

Ingram Micro

Software Development Intern

Naperville, IL
Apr 2024 – Nov 2024

- Developed an ML-powered vector search for a B2B product catalog with over 50,000 SKUs, improving search relevance by 40%.
- Designed and deployed a chatbot using Gemma 2 LLM, delivering personalized product recommendations to 600+ users.

AnandLab @ University of Illinois at Chicago

Research Intern

Chicago, IL
Apr 2023 – Aug 2023

- Assisted 2 Ph.D. students in proving the existence of van der Waals forces between the surface of a liquid and a droplet, contributing to 1 lab manuscript.
- Analyzed data sets from 20+ experiments, compiling findings into a document referenced by 2 ongoing lab projects.
- Processed 200+ droplet microscopy images to detect additional interfacial forces and monitored evaporation rates, correlating with over 10 observed physical phenomena.