

# Soham Kundu

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## EDUCATION

### University of Toronto

Toronto, ON

Bachelor of Applied Science in Mechanical Engineering + PEY Co-op

Sep. 2024 – Apr. 2029 (Expected)

**Technical Skills:** SolidWorks, CSWA Certified, Basic Machining Certified, GD&T, Matlab, 3D-Printing, Python, Java

## EXPERIENCE

### Mechanical Design Engineer

Sep. 2024 – Present

University of Toronto Supermileage Team

Toronto, ON

- Designed and modeled precision carbon fiber jigs and mounts in **SolidWorks** with  $\pm 0.2$  mm tolerance, applying **DFM principles** that reduced floor assembly time by 30% and improved drilling accuracy during composite chassis production.
- Supported the **carbon forging** of rear brake mounts by **3D printing** high-temperature molds, performing surface preparation, resin application, and manual carbon fiber layup, **producing high-strength forged carbon components** with consistent fiber orientation and minimal voids.
- Collaborated with a cross-functional team of 10 engineers to fabricate and assemble a carbon fiber monocoque floor, managing component fitment and sourcing materials through **McMaster-Carr**, which lowered procurement costs by 12% while maintaining structural integrity.
- Developed and integrated aerodynamic assemblies, including two wheel wells, two tie-rod covers, and a lightweight carbon fiber tire hub casing, achieving a **15% weight reduction** over the previous aluminum-steel design and improving structural alignment in the full vehicle CAD model.

### Mechanical Engineering Student

Jan. 2025 – Apr. 2025

University of Toronto Facilities & Services, University of Toronto Sustainability Office

Toronto, ON

- Led the redesign of the 3rd-floor rooftop of Chestnut Residence (1100+ student dorm) to reduce heat loss and improve year-round access, projecting **\$12,000 in annual HVAC savings**.
- Collaborated with 5 engineers to evaluate 50+ design concepts using Excel and Blender, ultimately developing a high-feasibility green roof plan with **0.5%–2% ROI**.
- Conducted client interviews and technical scoping to convert stakeholder vision into a 70+ page concept design specification document aligned with budget and code constraints.
- Delivered the final proposal to the Engineering Manager and department executives through a live presentation and slide deck, and received approval to proceed with the implementation feasibility study.

### Engineering Student

Sep. 2024 – Dec. 2024

University of Toronto Sustainability Office

Toronto, ON

- Led a team of 6 engineers** in redesigning the Bahen Courtyard and indoor restaurant into a sustainable, eco-friendly gathering and dining space.
- Conducted client meetings** to define and refine the problem statement, ensuring alignment between client objectives and design direction.
- Developed a 20+ page **project requirements document** and produced 50+ conceptual designs, narrowing them down to 3 final proposals in a **30+ page conceptual design specifications document**.

## PROJECTS

**Portfolio:** <https://kundu-soham.github.io/>

### Hobbyist Level Robot Arm for Cinematography | Project

Sep. 2025 – Dec. 2025

- Designed a 6-DOF robotic camera arm** by benchmarking 10+ commercial systems and defining requirements ( $>1.5$  m reach, 3–7 kg payload,  $<100$  kg mass,  $<\$3,000$  cost), delivering a feasible system-level concept.
- Conducted mechanical analysis and component sizing, including **torque and inertia calculations**, specifying a 75:1 planetary gearbox (195 N·m) and 450 N·m joint torque to ensure stable dynamic performance.
- Modeled the final assembly in **SolidWorks** and produced **professional engineering drawings**, using a weighted Pugh Matrix across 4 concepts to select an optimized design achieving a 2 m reach and 3–7 kg payload.