Shreya Chandrasekaran

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Education

University of Toronto **Sep 2023 – Present**
Bachelor of Applied Science in Mechanical Engineering (Graduation: 2029) *Ontario, Canada*

Skills

Software: CAD: Fusion 360, SolidWorks, SketchUp; Programming: Python, MATLAB

Fabrication & Prototyping: FDM 3D-printing (Cura), CNC machines, Prototype development, DFM, Engineering drawings, Hand & power tools, soldering

Major Projects

Camera Clip | *Design Engineer* **Jan 2025 – May 2025 | University of Toronto**

- Designed a quick-access camera carrying solution enabling single-hand attach/detach in < 2 s, meeting client ergonomics, security, and durability specs
- Generated 121 concepts via morphological charts, reverse engineering, and SCAMPER; down-selected using feasibility checks, decision charts, weighted matrices, and Pugh charts
- Modeled in Fusion 360 with refined tolerances; selected PLA+ for strength-to-weight, printability, and sustainability
- Prototyped using FDM 3D printing; iterated twice to improve joint durability and hinge smoothness
- Bench-tested for dimensional accuracy and load; verified < 2 s access time and zero detachment failures
- Produced 3D renderings, engineering drawings, and a documentation package for potential manufacturing scale-up

Fall Detection Device (Biomedical) | *Project Manager* **Jan 2024 – May 2024 | University of Toronto**

- Redesigned fall-detection device for long-term care facilities, targeting $\geq 95\%$ accuracy and $\leq 5\%$ false positives
- Produced engineering sketches, Gantt charts, and development milestones
- Integrated accelerometer and gyroscope; optimized casing, sensor placement, and sampling frequency
- Tested preliminary prototype in controlled settings to validate accuracy against metrics

Wayfinding Solution | *Project Manager* **Sep 2023 – Dec 2023 | University of Toronto**

- Conducted accessibility audit of Hart House, mapping entry points, traffic flow, and visibility constraints to identify navigation bottlenecks
- Ideated 80+ concepts, including physical signage, floor markings, and digital augmentation options; down-selected via decision-making tools and reverse engineering of existing campus wayfinding to converge on a hybrid signage–map system
- Produced annotated sketches for sign placement, orientation, and height to maximize visibility
- Delivered conceptual package with cost estimates, materials, and accessibility compliance

Sustainable Shopping Cart (Product Design) | *Individual Project* **Jul 2020 – Apr 2021 | GEMS Wellington**

- Designed collapsible shopping cart to reduce disposable bag use and save space
- Researched ergonomics, weight distribution, and folding mechanisms through user interviews and market analysis
- Modeled in Fusion 360; fabricated down-scaled FDM prototype and functional timber prototype using hand and power tools
- Delivered final package with engineering drawings and full Life Cycle Assessment

Internships

VHM Hospital | *Biomedical Research Intern* **Jul 18, 2022 – Jul 20, 2022 | India**

Shadowed the lead neurosurgeon to observe the use of biomedical devices during live procedures; Assessed device functionality and efficiency; Compiled observations and areas for potential improvement into a detailed technical report.

Volunteering

Claylab Education Foundation | *Course Designer* **Jun 2022 – Jul 2022 | India**

Collaborated with a team to design a comprehensive course syllabus; improved mentor assessment techniques and student comprehension methods; enhanced overall course effectiveness and learning experience.

Claylab Education Foundation | *Mentorship Program Coordinator* **Feb 2023 – Apr 2023 | Virtual**

Managed 20 mentor-mentee pairs in a virtual environment; guided pairs to meet weekly targets; conducted bi-weekly mentor meetings.

Awards

- **Outstanding International Student Award**, University of British Columbia (2023) — CAD 13,000 scholarship upon admission.
- **Top 5 Finalist**, QUEERI Sustainable Development Competition (2020).