VICTORIA VASTIS

ENHANCE THE HUMAN EXPERIENCE.

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EDUCATION

Carnegie Mellon University   **Pittsburgh, PA | December 2024**

Master of Science in Integrated Innovation of Products and Services
Relevant Courses: Experience Innovation, Integrated Product Development, User Research: Theory, Methods, Practice

University of Toronto   **Toronto, Canada | June 2023**

Bachelor of Applied Science in Mechanical Engineering
Relevant Courses: Mechatronic Systems: Design and Integration, Product Design, Microcontrollers and Embedded Microprocessors

RESEAERCH EXPERIENCE

Mechanics and Aerospace Design Laboratory - University of Toronto   **Toronto, Canada**

Propulsion System Lead   **September 2022 - April 2023**
- Developed an electric octocopter propeller system theoretically capable of scaling 500m in under 60s by achieving a total static thrust of 32kN.
- Created a first principles propeller dynamics model to optimize various geometrical parameters based on the required thrust, pitch, air foil geometry, temperature changes, and various motor rotational speeds.
- Simulated and iterated upon the final propeller design through the use of computational fluid dynamics to verify its theoretical thrust capabilities at a variety of extreme temperature conditions.

PROFESSIONAL EXPERIENCE

Lucid Motors   **Palo Alto, CA**

Chassis + Manufacturing Engineering Intern   **May 2022 - August 2022**
- Designed and assembled an in-house brake drag rig that can be adapted to quantify the effects of brake drag for any rotor and caliper combination at a variety of vehicle speeds and braking forces.
- Developed electrical and software architecture for the brake drag rig's data acquisition module utilizing both CAN-bus communication and Arduino microcontrollers.
- Created an automated leak text fixture for the electric motor assembly line that saved approximately $300k and reduced the original design's cycle time by 25s.

Tesla Inc.   **Palo Alto, CA**

Chassis Engineering Intern   **September 2021 - December 2021**
- Designed and assembled high-strength bending test fixtures for air suspension systems.
- Led and collaborated with reliability and testing teams to understand and learn from component failures to enhance the robustness of the product vehicle's build quality.
- Developed modal analysis and static analysis FEA simulations to design brackets for large vehicle models.

Taiga Motors   **Montreal, Canada**

Mechanical Design Engineering Intern   **May 2021 - August 2021**
- Used surfacing modelling and digital art techniques to design prototypes for future vehicle safety systems.
- Developed the first ever HV battery labels for electric PWC + snowmobiles battery packs and set the industry standard to be discussed with Transport Canada.

CleanSlate UV   **Toronto, Canada**

Product Management Intern   **May 2020 - August 2020**
- Built the foundation for CleanSlate UV's first business-to-consumer product in only 6 weeks.
- Conducted market research to develop a thorough competitive landscape of the UV-C consumer market complete with quantitative and qualitative competitor product features and traits.
- Hosted the product proposal presentation clearly illustrating the gap, the competitive landscape, and the product-market fit.

EXTRA CURRICULAR

University of Toronto Formula Racing   **Toronto, Canada**

Brakes System Lead + Suspension Engineer   **June 2020 - March 2022**
- Developed new pedal tray design to reduce fabrication time by 80% to optimize the lack of workshop time due to COVID-19 lockdowns.
- Experimented with various heat sink brake rotor designs to further reduce weight and maximize heat dissipation efficiency.
- Designed 10+ iterations of the suspension wheel centre to reduce the overall mass by 31% and increase the torsional stiffness by 27%.

PROJECTS

Cyber Shredder Guitar   **Toronto, Canada**

Solo Project   **January 2022 - October 2022**
- Designed and hand-built a Cybertruck-inspired aluminum electric guitar with an embedded Arduino-powered sound reactive LED system.

SKILLS

- **Design:** SOLIDWORKS, CATIA V5, Rhino 7, 3DEXPERIENCE, Autodesk Inventor, Adobe Photoshop, Figma, Procreate, Hand drafting
- **Simulation:** ANSYS (Static Structural, Modal, Fluent), HyperMesh
- **Hardware:** Arduino, Raspberry Pi, Teensy 4.0, Bela
- **Programming Languages:** C++, Python, MATLAB, Pure Data