MOBARRAT SHAHRIAR

Mechanical Engineering Graduate—University of Toronto
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WORK EXPERIENCE

Lead Product Design Engineer Jul 2021 - September 2022
GASTRONOMOUS

- Coordinated multi-disciplinary teams to develop autonomous commercial equipment for Quick Service Restaurants (QSRs) to **reduce food waste and energy by over 20%** and exceed throughput targets across North America
- Developed Product Data Management tool to design and manage over **200 mechanical components**, including detailed engineering drawings and assembly plans for the production of pilot and alpha builds
- Identified various **National Sanitation Foundation (NSF) specifications** governing the design of commercial food equipment to ensure the product will meet QSRs' food safety standards ahead of the mass production stage
- Investigated and applied cost-effective and reliable design choices in **3D modelling of various sheet metal, cast and machined components**, minimizing lead times and costs associated with prototyping
- Spearheaded Gantt chart planning and delegated tasks to accelerate growth of the startup, leading to developing a **working pilot from a concept within 4 months** in a fast-growing industry

Autopilot and Electronics Product Design Intern Sept 2019 - Aug 2020
TESLA

- **Led** technical development and integration of numerous camera and sensor systems across all production-level projects improving self-driving vision accuracy and reliability in humid and snowy climates
- Conducted simulation studies **(OPTIS & CATIA)** by visualizing camera field-of-view to propose placement & look-vector, which optimized machine learning computer vision algorithm, aesthetics, and electromechanical integration
- Communicated and calculated in-depth **RSS tolerance analysis** of mating components and requirements for GD&T to international suppliers ensuring products can be mass-manufactured with a **defect rate less than 0.001%**
- Conducted plant visits to conceptualize production process and provided creative solution to result in elimination of failure mode without a massive retrofit or process change, saving the company over **$200,000 yearly**

Manufacturing Design Intern May 2019 - Aug 2019
L3HARRIS

- Created CAD designs & drawings to assist in the manufacturing of tooling for **military-grade imaging systems**
- Designed an adaptor to streamline the testing process of the camera and IR payload rotation system; implementing a running tolerance fit and material choice to achieve the desired functionality of the adaptor
- Invented, simulated, and tested a compact, low-cost shelving system to increase work order efficiency and **reduce wasted space on the shop floor by over 40%**

TECHNICAL SKILLS

Engineering Tasks: Various Manufacturing Principles, GD&T, Tolerance Stack-up, Design of Experiments
CAD Software: SolidWorks, CATIA, Fusion 360, OnShape, Eagle, HyperWorks, ANSYS, OPTIS
Programming: Python, MATLab & Simulink, Excel VBA, LaTex, CATIAVBA, R

PERSONAL PROJECTS & INTERESTS

MakerMade: Assembled a vertical 3-axis CNC Mill and laser etching machine to create custom designs on wood and sheet metal pieces for variety of professional and hobbyist applications
HPVDT: UofT Graduate Club focused on desiging and racing human powered vehicles.
Designed and assembled 4-axis CNC Hot-Wire Cutter for wing manufacturing from a 3D Model
Hobbies: Woodworking, Soccer, Volleyball, Puzzles & Riddles, Travelling, Chess, Stock Market, Tech-Nerd

EDUCATION

University of Toronto, Faculty of Engineering Sept 2016 - Apr 2021
BASc Mechanical Engineering, Business Certificate, **CGPA: 3.62** (Deans List 2016 - 2021)
Project Management Essentials Certified, Professional Scrum Master Training (Ongoing)