Shafwat Khan

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University Of Toronto Mechanical Engineering (PEY) ***2024 - present***

Relevant Courses: Mechanical Design, Material Science, Engineering Strategies and Practice I/II, Calc I-III
Intended Minor: Advanced Manufacturing

SKILLS

Languages Bangla (mother tongue), English (fluent)
Technical MATLAB, LaTeX, SOLIDWORKS, LANTEK EXPERT, JAVA, 3D PRINTING, MACHINING

WORK EXPERIENCE

Engineering Support | Sable Metal Fabrication

May 2025 - Aug 2025

- *Designed and modified 3D models for custom sheet metal parts using **SolidWorks** and nested over **30** programs for the laser using **Lantek** ensuring manufacturability, and efficiency to improve customer satisfaction.*
- *Conducted thermal and **force simulations** on real-world components such as a slat-wall shelf, analyzing and optimizing load-bearing capacity and design integrity to improve ease of work in the shop.*
- *Assisted with a variety of hands-on fabrication tasks, **wiring** components, laser bed maintenance, slat-wall installation, **3D printing**, and operating a brake press, resulting in a noticeable improvement in job run times.*
- *Collaborated with shop employees to identify and resolve over **4** major workflow inefficiencies by **designing and manufacturing** custom creative solutions, resulting in reduced runtime for many customer jobs.*

EXTRA CURRICULAR

Team Captain | FIRST Robotics Team

Sep 2022 - Jun 2024

- *Captained a team of **60** students to design and manufacture **3** robots fit for competing at provincial-level competitions over 2 years, encouraging and inspiring students to pursue engineering in the process.*
- *Trained **20+** new team members in **machining**, troubleshooting, and problem-solving under pressure for manufacturing during competition times and build season, improving self confidence and initiative in students.*
- *Designed various components of the robot using **OnShape** and **SolidWorks**, assembled and troubleshooted under time constraints and competition pressure, teaching me about design principles and **manufacturability**.*
- *Operated and oversaw the operation of various machines such as bandsaws, drill presses, power tools, **3D printers**, and **CNC machines** to fabricate components of the robot, ensuring safety and efficient tool usage.*

Teacher Assistant | TDSB Reach Ahead

Jul 2023 - Aug 2023

- *Evaluated more than **120** assessments submitted by Grade 8 students over one month, maintaining accuracy and fairness in the grading process, leaving constructive feedback to aid in student growth.*
- *Collaborated with a group of **3** to guide and supervise groups of **10+** students in various science and math activities to increase their interest, demonstrating strong **leadership** and conflict resolution skills.*
- *Taught academic concepts that supported the grade 8 students through their transition into high school, such as fractions, algebra, and linear graphing as well as collaboration and important study skills.*

PROJECTS

Slat-wall Fabrication Designed a Slat-wall using **LEAN** principals to help with storage space
Arduino Alarm System Programmed an **Arduino** and wired up bells to set alarms at specific times
Assembly Optimization Optimized assembly of existing parts by adding tabs and jigs to the part
I4 engine Shaft Created the basic shaft and pistons of I4 engine to learn the mechanisms
Stress Simulation **Simulated** behavior of parts under different levels of stress and geometry