MARIEM AHMED

MECHANICAL ENGINEERING

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PERSONAL PROFILE

Dedicated Mechanical Engineer with strong knowledge of technologies, tools and best practices in civil and electrical design using AutoCAD and engineering drawings. Experience working as a team member to accomplish engineering goals.
Showcasing excellent deliverables and results demonstrating dedication, leadership, superior communication, and industrious behavior. Critical thinking and analysis expertise manifesting the ability to problem solve both creatively and effectively. Proven ability to multitask under pressure and meet deadlines without compromising quality and accuracy of deliverables. Extremely adaptable to new situations and environments and can seamlessly fit into any team setting fulfilling and exceeding expectations.

EDUCATION

University of Toronto
April 2021

Honours Bachelor of Applied Science Mechanical Engineering (2021 Deans List)

- Minor in Robotics and Mechatronics
- Certificate in Artificial Intelligence Engineering
- Certificate in Engineering Business

Relevant Skills: MATLAB, Python, Arduino, C, C++, SolidWorks, Fusion 360, AutoCAD, SAP, GNet, Excel, Word, PowerPoint, Outlook, ANSYS Finite Element Analysis (FEA), Robot Operating System (ROS)
Relevant Certifications: Basic Machining, LabView, Professional Engineering in Progress, IES Fundamentals of Lighting

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PROFESSIONAL EXPERIENCE

Electrical and Construction Project Coordinator

February 2023 - Present

Energy Network Services Inc.

- Responsible for preparing cost estimating and bids for projects
- Develop and compile specifications and tender packages.
- Conduct field visits during the design development and construction process.
- Contribute to proposal development includes preparing schedules, cost estimates, and conducting project research.
- Skilled in interpreting and analyzing electrical diagrams, and technical specifications.
- Strong understanding of safety protocols and procedures in the construction industry.
- Excellent problem-solving abilities and attention to detail.
- Effective communication and interpersonal skills for collaborating with cross-functional teams.
- Collaborate with project managers, architects, engineers, and subcontractors to develop project plans, schedules, and budgets.
- Manage procurement and logistics for electrical materials, equipment, and tools, optimizing cost efficiency and availability.

Designer

June 2021 - January 2023

Powerline Plus Ltd.

- Assisted in preparation of design drawings and perform calculations for utility design drawings using SpidaCal and Voltage Drop Analysis.
- Accountable for the production of high-quality design drafts that incorporate best utility practice in accordance with Toronto Hydro standards and all applicable laws, codes and regulation.
- Created electrical schematics and Feeder-prints using AutoCAD Electrical Toolset.
- Determined most effective approaches to new projects by reading and analyzing feeder-prints, drawings and sketches.

Senior Project Estimator

May 2022 - January 2023

Powerline Plus Ltd.

- Supervised, led and trained Junior Estimators.
- Responsible for preparing High Level Estimate Cost for Toronto Hydro projects.
- Prepared material take-offs for MOSAIC and ELLISDON projects Works on the most challenging projects that required a broad understanding of construction methods (Jack and Bore projects) to estimate costs.
- Assigned estimating team members to ensure all scope of work items have been accounted for.
- Regularly reporting to Management and subcontractors updated on the project estimate status.
- Coordinated procurement of vendor and subcontractor quotes.
- Participated in development of solutions to subcontractors with a focus on financial analysis and capital investment.
- Collaborated with all departments to prioritize current projects for estimation.

Project Estimator
June 2021 - May 2022

Powerline Plus Ltd.

- Performed material take-offs and cost analyses for all projects
- Generated and evaluated multi-million dollar civil and electrical projects to verify accuracy of material pricing and validity of Excel formulae.
- Cost estimated, and cost control for all projects by using estimating tools SAP, GNet, and RFP Cost Excel Sheet, contacted subcontractors for pricing and negotiation of work.
- Attended meetings and discussed unit pricing with subcontractors Responsible for inspecting the site before construction to ensure that the requirements of the Contract Documents are fulfilled in a safe manner with requisite quality.
- Established skills and knowledge necessary for advancement to Senior estimator position.

Manager Laser Hair Removal Technician (Certified)
June 2016 - December 2022

MED SPA LASER

- Specialized in laser hair removal.
- Performed treatments with different skin types.
- Conducted presentations and demonstrate lasers in physician's offices.
- Maintained all documentation related to clients.
- Fostered a friendly, warm and exceptional customer service experience.
- Welcomed clients as they arrived for appointments.
- Notified supervisor of supply needs to ensure necessary items were in stock.

Customer Service Agent
May 2021 - June 2021

Teleperformance

- Reviewed insurance policy to determine coverage.
- Conferred with customers by telephone to provide information about products or services, take or enter orders, cancel accounts, or obtain details of complaints.
- Kept records of customer interactions or transactions, recording details of inquiries, complaints, or comments, as well as actions taken.
- Referred unresolved customer grievances to designated departments for further investigation.
- Resolved customers' service or billing complaints by performing activities such as exchanging merchandise, refunding money, or adjusting bills.
- Recommend improvements in products, packaging, shipping, service, or billing methods and procedures to prevent future problems.

General Research Member
April 2020 - July 2021

Miracle Glass Technologies

- Self-learned Fusion 360 tools through online tutorials.
- Designed optimal frame glasses on Fusion360 using parametric sketching, surface modelling, and generative design functions, will be 3D printed.
- Led and taught 10 members on how to use Fusion 360 for CAD designs.
- Supported research and development efforts to create new product equipment and processes.
- Evaluated potential subject participants to assess suitability for planne studies.
- Conducted meticulous research to identify information and answi multifaceted questions.
- Collaborated with leadership team to identify relevant questions ar determine best methods of collection.
- Planned, modified, and executed research techniques, procedures ar tests.

CodeZilla Summer Camp Teaching Assistant

Codezilla Kids

- Responsible for hosting physical activity events, improvised games/workshops when plans did not go through.
- Contributed with setting up the Tech Toys (using Mouse + Maze, Snap Circuit, Makey Makey with Slime, Dash Robot, Ozobot and Kano Motion Sensor) for 10 students.
- Led and taught 5 students on how to make a slime and connect it with a Makey Makey toy.

Website Director & Event Assistant
June 2018 - August 2018

University of Toronto Engineering

- Assisted with event cManaged website using WordPress to update photos, upcoming events and forms for UnERD 2018 (Undergraduate Engineering Research Day), to help students find information about the conference.
- Assisted with event logistics for 200 delegates by providing the necessary information about the conference for the attendees, organized the registration tables and name tags.

Information Desk & Gift Shop Representative
December 2015 - July 2016

Scarborough General Hospital

- Helped patients with mobility.
- Supported residents in transferring from bed to wheelchair and vice versa.
- Escorted patients, families, and visitors to their required destinations.
- Provided reception support and give general information to visitors and families.

PROJECTS

Team Lead Capstone Project - Open-Source Ventilator
September 2020 - April 2021

University Health Network

- Researched and developed a safe open-source PRVC ventilator that costs $5,000 CAD, that adheres to MHRA standards using locally sourceable pneumatic and electronic components.
- Implemented appropriate solenoid valves that allows patient to exhale down from maximum allowable lung pressure to lowest positive end expiratory pressure within minimum time of 0.5 sec.
- Designed electrical and hardware system using mechatronics principles, such as microcontroller programming (Logic Module) and circuit analysis.

Algorithm Developer
January 2021 - April 2021

University of Toronto

- Developed a robot exploration algorithm using ROS that can independently navigate through Gazebo Map.
- Implemented an algorithm to optimize and navigate the path to all ten objects of interest in the maze and recognized images on the objects that match the template images within 8 minutes.
- Explored and mapped the environment to find 7 victims, identify their current emotional state and appropriately interact with them based on their emotions within 20 minutes.
- Performed image quality tuning and measurement.
- Implemented or modified existing algorithms to analyze images and data.
- Collaborated with other members of a project team to meet defined scientific and technical goals/requirements.
- Hands-on experience with ROS, Matlab/C/C++ programming languages.

Music Genre Classification AI/ML Developer
January 2021 - April 2021

University of Toronto

- Built a music Genre classification project using a machine learning algorithm known as the K-Nearest Neighbors classification, K-means clustering and Convolutional Neural Network algorithms.
- Remodelled, trained, and implemented deep learning AI models such as ANNs (Artificial Neural Networks), CNN (Convolutional Neural Network) and AlexNet using GTZAN dataset.
- Attained an accuracy of 79.4% on the GTZAN test set using AlexNet model.
- Collected and tested new dataset from YouTube by selecting a 30 second subsection of audio files with total of 15 new songs (5 per genre), using AlexNet model to achieve an accuracy of 48.8% on new data test set.

Propulsion Engineer
May 2019 - January 2020

Spaceport Toronto X Vienna - TXV

- Conducted a safety Relief Valve that works for pressurant and propellant tanks by preparing engineering calculations from flow charts and using Matlab and WebPlotDigitizer.
- Maintained knowledge of regulatory requirements for valves for building rockets.
- Valves Systems subject matter expert. Expertise in the design, test, operation, and fault detection for valve systems used on space systems and related ground equipment.

Team Member of Airframe Composites - Rocketry Division
August 2018 - May 2019

University of Toronto Aerospace Team

- Interfaced with 6 leads, 5 supervisors, and 4 engineers to solve problems and improve processes for hybrid rockets.
- Coordinated with Engineering in the determination and development of materials, processes, specifications, and related documents to be used in the fabrication, rework and repair.
- Assisted in the preparation of molds for nose cones and rocket frames.

Design Team Lead - Rover Design
September 2018 - December 2018

University of Toronto Aerospace Team

- Designed and assembled 82 parts on SolidWorks
- Modelled a 3-joint rover arm and 360-degree rotational gripper, the gripper transmission system consists of a worm gear and two spur gears
- Collaborated with 3 teams to compare multiple arm designs using tools such as Pairwise comparison and Weighted Decision Matrix, and created a PowerPoint of three alternative designs

Design Team Lead - Early Forest Fire Detection Project
September 2017 - December 2017

University of Toronto

- Managed and Coordinated Team of 3 members by monitoring their progress and tracked task-completion.
- Created a list of questions that can be converted into a checklist for an inspector to use in determining fire safety in tall wood buildings.
- dentified problem areas and instituted large-scale projects to address them.
- Designed several aspects of a drone that aimed to detect forest fires earlier

ACHIEVEMENTS

Engineering Dean's Honour List

April 2021

- In 1983, the Faculty Council instituted the Dean’s Honours List to give special recognition to every student who demonstrated academic excellence in an individual session. The names of students who achieved Honours standing in a given session will appear on the Dean’s Honours List of that session. The list is posted prominently for a limited time in a place designated by the Faculty for this purpose. The lists for successive sessions are compiled in a permanent record maintained in the Office of the Registrar.

The Wallace G. Chalmers Engineering Design Scholarship

November 2020

- This award is given to students (or a team of students) in Mechanical or Industrial Engineering who demonstrate strong academic performance and design capabilities in design-intensive courses.

Horace Hally Admission Scholarship

June 2016

- This scholarship was established in 1997 from the estate of the late Horace Angus Hally, a friend of the University of Toronto. The award will be granted to a student entering the first year of the Mechanical Engineering program on the basis of satisfactory academic standing in the secondary school courses required for admission.