Khaalid Ismail

North York, ON, Canada khaalid@my.yorku.ca +16476483742 in/LinkedIn

SUMMARY

Motivated and detail-driven Mechanical Engineering student at York University (B.Eng., Expected 2026), working toward a Professional Engineer (P.Eng.) designation in Ontario through PEO's Competency-Based Assessment program. Experienced in municipal infrastructure design, water resource systems, stormwater management, CAD modeling, and construction documentation. Adept at working in cross-functional teams and conducting site inspections. Passionate about delivering sustainable and community-focused engineering solutions through collaboration and continuous learning.

EDUCATION

Bachelor of Engineering in Mechanical Engineering

York University • Expected 2026

Relevant courses: Engineering Graphics and CAD Modelling, Instrumentation and Measurement Techniques, Engineering Projects, Fluid Mechanics, Machine Elements Design, Thermodynamics and Heat transfer

ACADEMIC EXPERIENCE

E-Bike Design Project

Machine Elements Design Course *January - April 2024*

- Designed an eco-friendly electric bicycle using AISI 4130 steel frame and optimized gear systems to achieve 30 km/h speed.
- Performed **FEA simulations**, **stress**, and **fatigue life** analysis in SolidWorks to verify frame integrity.
- Engineered drivetrain using **AGMA standards** and gear ratio optimization to ensure durability and energy efficiency.
- Enhanced skills in **sustainable design**, **mechanical analysis**, and **real-world application of CAD tools**.
- Prepared detailed technical documentation, cost estimates, and presented specifications aligned with engineering standards.

Autonomous Water Skimmer

Toronto Portland Waste Management Project *September – December 2023*

- Developed a **solar-powered, autonomous water vehicle** with ultrasonic sensors for obstacle detection and trash collection.
- Designed and prototyped a docking station for autonomous trash offloading and sorting.
- Integrated **embedded systems**, **sensor arrays**, and **sustainable energy systems** into the final design.
- Contributed to environmental protection and demonstrated alignment with **UN Sustainable Development Goals**.
- Created construction drawings, project coordination reports, and sustainability compliance documentation for stakeholder presentations.

Boxing Rehabilitation Tool (Strike Board)

Instrumentation & Measurement Techniques Course *January – April 2023*

- Created a sensor-integrated strike board to aid in rehabilitation and form correction for injured boxers.
- Used resistive force sensors and accelerometers to measure punch metrics (force, speed, accuracy).
- Programmed LabVIEW to capture and display real-time data with optimized performance through signal conditioning.
- Gained advanced experience in sensor integration, ergonomic design, and data acquisition systems.

WORK EXPERIENCE

Team Lead Ride Operator-- Canada wonderland *May - November 2023*

- Led and trained a team of operators, ensuring daily safety and operational efficiency.
- Resolved guest concerns while promoting teamwork through meetings and peer mentorship.

Team Lead Ride Operator-- ZARA & NIKE *August 2022- March 2023*

- Delivered customer service and processed high-volume transactions with accuracy.
- Supported merchandising and collaborated with team to meet store sales targets.

Technical skills

- CAD & Modeling Tools: SolidWorks (FEA, stress analysis, 3D modeling), AutoCAD.
- Programming & Simulation: MATLAB, Simulink, LabVIEW, Arduino IDE, Ansys.
- Instrumentation & Electronics: Sensor integration (force, accelerometer, ultrasonic), DAQ systems, signal conditioning.
- Mechanical Engineering Fundamentals: Thermodynamics, Heat Transfer, Mechanics of Materials, Fluid Mechanics, Machine Design.
- Manufacturing & Prototyping:3D Printing, CNC Machining, Welding, Soldering.
- Data Analysis & Reporting: Microsoft Excel (Pivot Tables, Statistical Analysis), Python (basic), Technical Documentation.
- Soft Skills: Collaborative teamwork, effective technical communication, project management, critical thinking.