

Salih Al-Tak

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Education

McMaster University

B.Eng in Mechanical Engineering (CO-OP)

Hamilton, ON

Sept 2020 - May 2025

Skills

- DFM / DFA
- Solidworks
- Python
- AutoCad
- CAD / CAM / CAE
- ANSYS
- SQL
- Matlab / Simulink
- FMEA
- GD&T
- JMP
- CNC Manufacturing

Work Experience

Adam Tools INC.

Building Design Specialist

Mississauga, ON

Sep 2024 - Present

- Developed engineered floor plans using **AutoCad** in compliance with project specifications and building codes, collaborating with engineers and architects to optimize designs for structural integrity and cost-efficiency.
- Performed detailed **cost estimates** and **forecasts** for construction projects, ensuring accurate material requirements and budget projections for building supplies like lumber, drywall, and beams.
- Provided technical support on material selection and construction methods to contractors and project teams.

Johnson Electric

Junior Engineering Specialist: Process and Product Development

Mississauga, ON

May 2023 - Aug 2024

- Utilized **SolidWorks** for designing and drafting drawings of various gear parts and assemblies, ensuring effective production and assembly through adherence to **DFM** and **DFA** principles.
- Conducted an in-depth **Root Cause Analysis** to investigate the causes of premature gear failure. Leveraged **Finite Element Analysis (FEA)** to enhance product performance and reliability.
- Collaborated with cross-functional teams to design mechanical components and conduct feasibility studies, performing thorough **testing** and **validation** to ensure designs met quality standards and production goals.
- Utilized **Python**, **SQL**, and **JMP** to efficiently collect and analyze extensive data for a vehicle transmission benchmarking system, driving enhancements in product development.

Oakly Landscaping

Crew Leader

Toronto, ON

Apr 2020 - Sept 2022

- Oversaw the daily operations of the landscaping business, managing a crew of 5 and ensuring the maintenance of gardens across 25 commercial and residential properties.
- Built and maintained strong **client relationships** by addressing inquiries, resolving issues promptly, and delivering exceptional service quality.
- Planned and organized efficient routes for maintenance teams to optimize productivity and minimize downtime.

University Projects

Ergonomic Snow Shovel

McMaster University

Hamilton, ON

Jan 2023 - April 2023

- Designed and manufactured a motorized device, using **Solidworks**, to ease the removal of snow in residential homes.
- Leveraged iterative application of **DFA** and **DFM** principles to optimize cost, ergonomics, and efficiency during the design phase.
- Employed **Microsoft Project** for efficient timeline management and task allocation.

Kinetic Robot Via Propulsion Mechanism

McMaster University

Hamilton, ON

Sep 2021 - Dec 2021

- Engineered a robot with an intricate linkage system and a propulsion mechanism using **Solidworks**.
- Integrated **mechanical**, **electrical**, and **software** components, using SolidWorks for design and simulation, with parts fabricated via 3D printing and laser cutting to ensure performance and reliability.
- Programmed an **Arduino microcontroller** to control the motors movements through a responsive switch interface.

Extracurricular Activities

McMaster Society of Mechanical Engineering

Mechanical Engineering Department Representative

Hamilton, ON

Sept 2022 - Present

- Planned departmental events, creating a platform for students to share their concerns about the mechanical engineering department.
- Acted as a communication bridge between the student body and executive team, voicing concerns and relevant updates to both parties.