Marek Polak

BASc Mechanical Engineering
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➤ **Graduate Mechanical Engineering** Aspiring to combine knowledge of engineering principles and design software to create mechanical engineering designs from prototype to production.
➤ **Effective communicator** who excels at presenting technical concepts to engineers and managers. Experienced in teaching complex mathematics and physics concepts. Enthusiastic team worker.
➤ **Motivated self-starter** recognized for adapting to adverse situations, effective use of technology, continuously exploring new concepts and ideas within engineering and aspiring to meeting goals within budgets and deadlines.
➤ **Fast-learner** passionate to share and upgrade engineering knowledge *Trilingual: English, French, and Polish.*

CORE COMPETENCIES

- Mechanical Design Concepts
- Performance Calculations
- Creating Bills of Materials
- Structural Design Fundamentals

- Data Analysis & Interpretation
- Testing & Troubleshooting
- Report Analysis & Design Documentation

- Mechanical Drawings & Modeling
- Cross-Functional Collaboration
- Mechanical Finite Element Analysis

TECHNICAL EXPERTISE

Programming Languages: C, C++, Python
Pipe Flow Software: CAESAR II, AFT Fathom 10, AFT Impulse 6
Mechanical CAD Design: SolidWorks, AutoCAD, SolidEdge

PROFESSIONAL EXPERIENCE

Instructor | Mathnasium | Mississauga, ON   Nov 2021 – August 2022

Teach math concepts to students in grades 1-12 and create an engaging curriculum to provide young students with the tools to strengthen their reasoning, analytical, and problem-solving skills.

> **Increased the grade 12 math course average from 60 to 80%,** putting students in powerful positions to enter any chosen program by teaching them the logic behind math rather than formulas.

PDG/Piping Co-Op | Hatch Ltd | Mississauga, ON   Sep 2018 – Dec 2018

Helped develop efficient piping processes that safely transport fluids and gases across multiple large pipeline projects in Alberta Canada.

> **Performed stress analysis of piping systems** with Caesar II, hydraulic analysis with AFT Fathom 10, and transient analysis with AFT Impulse 6, using data collected to make efficient and cost-effective design choices.

Contracting Sales Co-Op | HTS Engineering | Toronto, ON   May 2017 – Aug 2017

Coordinate project take-offs involving multidisciplinary groups , ensuring the take-off is completed on time and within a reasonable budget. Produce a bill of materials (BOM) through the analysis of mechanical drawings and job specifications.

> **Played a key role in a team that secured multiple contracts** by creating project take-offs for HVAC projects based on job specifications and bidding process requirements.

Ideas Clinic Co-Op | University of Waterloo | Waterloo, ON   Sep 2016 – Dec 2016

Worked with faculty to help design and run various first-year engineering design activities

> **Developed, modeled, and manufactured a prototype** ping-pong ball launcher in SolidWorks to demonstrate kinematics concepts.
> **Created an adjustable model of an RC car's spring and damping system** in MATLAB that can calculate the vibrations in the springs based on different parameters.

Engineering/Marketing Co-Op | Hammond Manufacturing | Guelph, ON   Jan 2016 – Apr 2016

Analyzed and corrected AutoCAD drawings, tested cubic feet per minute (CFM) output for filter fan units, and defined pricing for new product lines.

EDUCATION

Bachelor of Applied Science in Mechanical Engineering, Honors, **University of Waterloo | 2015 - 2021**