

Matthew Margittay, P.Eng., PMP

Mechanical Design Engineer | Robotics, Aerospace & Flight-Qualified Hardware

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SUMMARY

P.Eng.-licensed mechanical engineer and PMP with 5 years delivering flight-qualified space hardware, robotics, and industrial process systems. Led design, prototyping, and test campaigns for Canadarm3 mechanisms at MDA Space and took the RADDog quadruped security robot from concept to production. Combines first-principles design rigour (SolidWorks, FEA, GD&T) with hands-on fabrication and a record of shipping hardware against CSA/NASA requirements.

CAREER HIGHLIGHTS

- Qualified 3 flight mechanisms for the Canadarm3 program (TVAC, vibration, Instron), contributing to patent filings for novel mechanical systems.
- Took the RADDog quadruped from concept to production: the first robotic dog deployed to a US police department.
- Ranked 2nd of 100 overall at Baja SAE Midnight Mayhem as suspension designer, builder, and team driver.

SKILLS

Mechanical & Systems: Technical Design & Analysis, CAD (SolidWorks, Fusion 360, AutoCAD), FEA, GD&T, Prototype Development, NPI, DFM/DFA, Root-Cause Analysis & FMEA, Design Reviews

Robotics & Automation: Robotics Engineering, Mechatronics, System Integration, Control Systems, Automation Design, PLCs & Motion Control

Fabrication & Test: CNC Machining, TIG/MIG Welding, 3D Printing/Additive, Rapid Prototyping, Test & Validation (TVAC, vibration, Instron), Lean/Kaizen

Project & Program Management: Project Planning, Cross-Functional Team Leadership, Resource Planning, Risk Assessment & Mitigation, Budget & Cost Control, Contract & Procurement Management

Business & Client: Technical Sales, Solution Development, Client Demos & Presentations, Proposal Development & Negotiation, CRM (Dynamics 365), New Business Development, Account Growth

WORK EXPERIENCE

Solutions Engineer | Quanser

Markham, ON · Jan 2026 – Present

- Deliver live technical demonstrations of robotics, mechatronics, and control-systems platforms (hardware and simulation) to engineering faculty and researchers at 10+ universities across a US Southeast territory.
- Translate faculty teaching and research requirements into tailored lab-architecture proposals spanning hardware, software, and curriculum integration; 10+ proposals delivered, US\$250K+ in wins.
- Serve as the technical bridge between customers and product engineering, converting field feedback and application requirements into actionable product input.
- Scope and configure multi-platform lab solutions against customer constraints (budget, space, curriculum outcomes), presenting trade-offs to technical and non-technical stakeholders.

Mechanical Engineer & Team Lead | MDA Space

Brampton, ON · Oct 2023 – Jan 2026

- Core engineering team member on the Lunar Gateway Canadarm3 program, developing flight hardware from breadboard prototype through integration against CSA/NASA mission requirements.
- Designed, prototyped, and delivered 3+ flight-qualified hardware systems for mission-critical operations, contributing to patent filings for novel mechanical systems.
- Led design reviews, technical audits, and client presentations with CSA/NASA cross-disciplinary representatives, ensuring compliance with aerospace standards.
- Managed mechanical design, scheduling, resourcing, and risk for a Canadarm3 subsystem, directing a 3–5 engineer team against a \$1M+ development budget.
- Directed and executed qualification test campaigns for 3 flight mechanisms — all successfully qualified — validating performance with DAQ systems and test equipment (loadcells, Instron, shaker table, TVAC, Stewart platform).

- Conducted trade studies and controlled design documentation and compliance reporting under rigorous aerospace protocols.

Mechanical Engineer & Project Lead | Robotic Assistance Devices (RAD)

Waterloo, ON · May 2021 – Oct 2023

- Led development of 3 robotics programs (ROSA, AVA, RADD OG), taking the RADD OG quadruped security robot from concept through MVP and 3 design sprints to production handoff.
- Directed cross-functional teams of 5+ engineers, overseeing rapid prototyping, iterative design, and hands-on fabrication using machining, 3D printing, and shop tools.
- Managed project planning, procurement, and R&D budget >\$200K, with sign-off authority over drawings, BOMs, PLM processes, and technical documentation.
- Owned ruggedization, environmental protection, charging, and mass/thermal management, delivering RADD OG to its weatherproofing (IP), mass, and battery-runtime targets under aggressive procurement timelines.

Process Engineer, Paint Department (Internship) | General Motors (CAMI)

Ingersoll, ON · May 2019 – May 2020

- Implemented process monitoring strategies, enhancing uptime and reducing unplanned system failures; served 8 months as interim Paint Mix Room Process Engineer.
- Led the system launch of the new 2021 Chevy Equinox paint colours in mass production.
- Delivered a process improvement project that cut energy consumption, saving \$40K annually.
- Provided on-call troubleshooting for high-pressure plant breakdowns, collaborating with licensed trades (electricians, millwrights, pipefitters) to execute maintenance and upgrades safely.

Engineering Co-op | Hi-REL Alloys

Niagara Falls, ON · May 2018 – Aug 2018

- Supported CAD design and ERP implementation for a manufacturer of high-reliability alloys and hermetically sealed hardware for medical, defence, and aerospace applications.
- Built a time-studies database for routing cycle times and shop-order estimates; facilitated ISO 9001:2015 audit preparation, with certification received.

PROJECTS & LEADERSHIP

Team Captain & Suspension Lead | Western Baja SAE Race Team

London, ON · Sept 2016 – May 2021

- Directed 5 subsystem leads, implementing structured workflows for milestone tracking, timely delivery, and competition readiness; competed in 5 SAE Baja races, ranked 2nd of 100 overall at Midnight Mayhem (Louisville, KY) as team driver.
- Developed a double-wishbone front and trailing-link rear suspension using SolidWorks CAD and FEA; individually designed and machined optimized front and rear knuckles.
- Oversaw and trained students in fabrication using CNC mills, lathes, 3D printing, and TIG/MIG welding.

Engineering Team Member | UKPIK-1 CubeSat, NASA/CSA Capstone

London, ON · Sept 2020 – May 2021

- Designed, prototyped, and tested the satellite's mechanical structure to Falcon 9 launch and NASA requirements; launched successfully in 2022.
- Validated launch and orbit survivability through structural analysis and vibration testing (FEA, shaker table, hand-calculation verification); machined the prototype to SpaceX/CSA/Nanoracks specifications.

EDUCATION

Bachelor of Engineering Science (BESc), Mechanical & Materials Engineering

2016 – 2021

Western University, London, ON · Honor Roll, 3.8 GPA; 12-month Professional Internship (GM CAMI)

CERTIFICATIONS

- Professional Engineer (P.Eng.), Professional Engineers Ontario, 2025
- Project Management Professional (PMP), Project Management Institute, 2025
- Certified SOLIDWORKS Associate (CSWA): Mechanical Design, Dassault Systèmes
- Certified SOLIDWORKS Associate (CSWA): Advanced Surfacing, Dassault Systèmes, 2020
- Certified SOLIDWORKS Associate (CSWA): Additive Manufacturing, Dassault Systèmes, 2020