

# Sam Bahrami

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## EDUCATION

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### University of Toronto

*B.A.Sc. Mechanical Engineering*

Minor in Robotics and Mechatronics, Certificate in Engineering Business

Toronto, ON

*Sep 2021 – Apr 2026*

## EXPERIENCE

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### Magna Electronics

*Process Engineering Intern*

More detail: [sam-bahrami.com/projects/internship](http://sam-bahrami.com/projects/internship)

Markham, ON

*May 2024 – Aug 2025*

- Engineered automation for product routing, labeling, and traceability on high-volume automotive electronics assembly, supporting multi-variant production at scale.
- Integrated PLC logic, HMI workflows, and API services (Python/C# with SQL-backed logging) to convert machine states and alarms into actionable quality, maintenance, and material workflows.
- Retrofitted existing automated equipment by remapping I/O, updating PLC programs, integrating DataMatrix scanning, and reworking fixtures/nests to add 19 new product variants without capital equipment purchases, avoiding \$200K in external costs.
- Built a real-time dispatch pipeline that generated 500+ standardized tickets per month, improving response time and saving 5 hours of downtime through earlier intervention and cleaner downtime data.
- Commissioned and revalidated 20+ modified stations (including heat-stake, leak-test, laser weld, and dial-table operations), executing functional testing, troubleshooting, and production release documentation under active production constraints.

### University of Toronto Formula SAE Racing (UTFR)

*Chassis Lead*

More detail: [sam-bahrami.com/projects/fsae](http://sam-bahrami.com/projects/fsae)

Toronto, ON

*Sep 2025 – Present*

- Owned the chassis structural architecture and load-path design for a Formula SAE electric car, defining tube layout, node geometry, triangulation strategy, and joint design to meet rules and safety requirements.
- Translated suspension/drivetrain and impact load cases into frame requirements using Ansys FEA, MATLAB, and hand calculations, iterating tube sizing and wall thickness to minimize mass while maintaining stiffness.
- Reduced chassis mass by 20% and cost by 43% through simulation-driven optimization and design-for-manufacturing changes (tube selection, joint simplification, and build-time reduction) while preserving structural performance.
- Designed the full manufacturing system: weld fixtures, cut lists, build sequence, and composite panel interfaces to ensure dimensional accuracy, repeatability, and robust load transfer.
- Fabricated and assembled the complete chassis, including TIG welding, composite bonding, and structural integration into the full vehicle platform.

### Inteplast Bags and Films Corporation

*Mechanical Engineering Intern*

More detail: [sam-bahrami.com/projects/ibf](http://sam-bahrami.com/projects/ibf)

Toronto, ON

*May 2023 – Oct 2023*

- Supported continuous-operation film extrusion and bag-making lines by troubleshooting mechanical issues (feed, sealing, alignment, and wear) across rollers, cutters, sealers, and conveyors.
- Built a component-level spare-parts and failure tracking system covering hundreds of wear items, enabling predictive maintenance and faster recovery during breakdowns.
- Used breakdown history and wear trends to prioritize interventions and coordinate maintenance scheduling around production demand, reducing unplanned downtime by 10%.
- Standardized troubleshooting and setup procedures across shifts to improve repeatability, reduce variation-driven defects, and increase overall equipment reliability.

## CERTIFICATIONS

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- Certified SOLIDWORKS Professional (CSWP) – Mechanical Design
- ASME GD&T Certified