

Aaron Emmanuel

Kinectrics Inc.
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Expertise

Aaron is a multidisciplinary professional with a background in mechatronics engineering, automation, advanced energy systems, and technology commercialization. His experience spans the development of robotic and autonomous systems, strategic business initiatives, and the commercialization of emerging technologies. Currently pursuing a Master of Engineering at the University of Toronto, he combines technical expertise with business acumen to advance complex engineering solutions from concept to deployment.

Education

2025 - 2027

Master of Engineering (MEng) – Mechanical and Industrial Engineering
University of Toronto

2020 - 2025

- Robotics Emphasis

Bachelor of Engineering (BEng) – Mechatronics Engineering
Ontario Tech University

- Graduated with Highest Distinction
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Key Experiences

Sep 2026 – Present

Associate Analyst | Kinectrics
Inspection and Maintenance Systems (IMS)

- Supporting the Calandria Relief System Modifications (CRSM) project

Jan 2026 – Aug 2026

Assistant Analyst | Kinectrics
Technology and Strategic Ventures (TSV)

- Supported the commercialization of radioisotope power and heating technologies by evaluating business opportunities across the space, defense, and nuclear sectors, and developing strategic growth plans for emerging technology programs.
- Led and contributed to customer proposals, and funding applications, coordinating with technical subject matter experts to translate complex engineering concepts into business cases, value propositions, and customer-focused solutions.
- Engaged with government agencies, industry partners, and research organizations to identify partnership opportunities, assess technology development pathways, and support strategic initiatives related to nuclear technologies and space power systems.

May 2025 – Dec 2025

Assistant Analyst | Kinectrics
Design Engineering and Sites (DES)

- Supported both mechanical and I&C engineering projects, applying a mechatronics background to address cross-disciplinary challenges.
- Delivered engineering solutions for equipment at various nuclear stations, ensuring urgent system recovery, compliance with industry standards, and smooth integration into existing plant infrastructure.

- Performed mechanical design analysis and validated electrical/I&C requirements to ensure qualification of replacement components and maintain system reliability.

Jan 2024 – Aug 2025

**Robotic Systems Designer | Clearwater Structures
Research and Development (R&D)**

- Spearheaded the development of an advanced underwater robot
- Led the integration of sonar and LiDAR cameras, increasing capture range by 30%, depth measurement by 25%, and accuracy by 20%
- Utilized Python-based GUI to streamline user interaction, reducing training time by 80% and improving system efficiency by 15%
- Engineered a system with 10+ sensors integrated into a hydraulic manifold, enabling effective real-time data collection

Jun 2024 – Aug 2025

**Technical Lead | Circulr
Systems Design and Integration**

- Led the design and development of a Reverse Vending Machine (RVM), automating item sorting and storage with 100% accuracy
- Achieved Technology Readiness Level 6, delivering the project 40% under budget
- Developed Python-based control systems on a Raspberry Pi to manage the RVM's functions, including item detection, sorting, and storage
- Implemented backend integration for real-time data tracking and storage updates

May 2022 – Dec 2023

**Engineering Intern | Kinectrics
Inspection and Maintenance Systems (IMS)**

- Integrated 5+ nuclear-grade sensors into the SPOT robot for increased functionality
- Designed four test plans for autonomous routine inspections using the SPOT interface with the potential to boost productivity by 25%
- Programmed a parts database software to manage 2000+ components across multiple clients
- Constructed a training mock-up utilizing additive manufacturing techniques to train staff for an international project