



# Maxwell McInnis

**Date of birth:** 27/01/2003 | **Place of birth:** Markham, Canada | **Nationality:** Canadian |

**Phone number:** (+1) 2899230540 (Mobile) | **Email address:** [maxwellmcinnis123@gmail.com](mailto:maxwellmcinnis123@gmail.com) |

**Website:** [www.MaxwellMcInnis.com](http://www.MaxwellMcInnis.com) | **LinkedIn:** [www.linkedin.com/in/maxwellmcinnis](http://www.linkedin.com/in/maxwellmcinnis) |

**Address:** 237 Lakeshore Rd E, Unit 4, L5G 1G8, Mississauga, Canada (Home)

## EDUCATION AND TRAINING

31/08/2021 – 31/03/2025 Guelph, Canada

**BACHELOR OF ENGINEERING (B.ENG) – BIOMEDICAL ENGINEERING** University of Guelph

Biomedical engineering training covering biomechanics, bioinstrumentation, medical device design, robotics, signal processing, and embedded sensing systems. Experience in mechanical design (CAD, simulation), engineering data analysis (MATLAB), and laboratory research including experimental design, data acquisition, statistical analysis, and validation workflows. Academic focus in human anatomy, lower-limb biomechanics, and human performance / injury analysis.

Research contributions in biomechanics, wearable sensing systems, and sustainable biomaterials supporting peer-reviewed publication and conference-level outputs.

Publication: <https://pubmed.ncbi.nlm.nih.gov/40347002/>

Portfolio: [www.MaxwellMcInnis.com](http://www.MaxwellMcInnis.com)

**Address** 50 Stone Rd E, Guelph, ON , N1G 2W1, Guelph, Canada | **Website** <https://www.uoguelph.ca/> |

**Field of study** Engineering, manufacturing and construction | **Final grade** A | **Level in EQF** EQF level 6

## WORK EXPERIENCE

**BIOMEDICAL SOFTWARE ENGINEER & OPERATIONS MANAGER – KRAKEN SENSE** – 11/04/2025 – Current – OAKVILLE, CANADA

Lead product lifecycle coordination across hardware, chemistry, and device systems with focus on software engineering, product development, and technical R&D. Designed and commercialized device hardware while building core digital infrastructure (ERP, AI CRM, scientific R&D software) to scale engineering and lab operations.

- Designed and commercialized accessory hardware including full mechanical CAD (Autodesk Inventor), fluidics systems (peristaltic pumps, chemical compatibility, flow control), PCB and sensor integration, manufacturability planning, and lifecycle cost modeling.
- Performed device validation, test engineering, and failure analysis while developing automation and sensing control software using Python-based control logic and embedded system integration.
- Built and deployed internal engineering software including ERP, AI-automated CRM, and qPCR primer design automation using Python, FastAPI, PostgreSQL, Redis, REST APIs, and cloud deployment (GCP Cloud Run, Docker, Linux), delivering ~100% increase in operational visibility, ~2–3× lead processing capacity, ~50–80% reduction in assay preparation time, and ~30–50% faster R&D iteration cycles.
- Developed full-stack internal tooling using Node.js, React, Next.js, and SQL data systems supporting engineering, lab, and production data workflows.

**ENGINEERING ADMINISTRATOR – WALINGA INC** – 01/01/2025 – 11/04/2025 – GUELPH, CANADA

Supported engineering operations, R&D coordination, workflow automation, and SR&ED technical documentation supporting successful tax credit claims and engineering execution.

- Streamlined engineering workflows and reporting systems improving cross-team collaboration and reducing internal delays.
- Managed scheduling and resource allocation for 15+ technical staff, contributing to ~20% faster project delivery

• Designed automated engineering planning and reporting systems using MariaDB, SQL data modeling, and Power BI dashboards, converting ~4-hour manual planning into real-time automated workflows with live KPI monitoring.

**RESEARCH ENGINEER – UNIVERSITY OF GUELPH** – 01/04/2024 – 01/04/2025 – GUELPH, CANADA

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Conducted biomedical engineering research across biomechanics, wearable sensing systems, bioinstrumentation, and sustainable biomaterials across three research laboratories.

- Designed and validated wearable sensor systems for gait correction and foot alignment monitoring using ESP32 microcontrollers, IMUs, vibration feedback systems, and real-time signal processing algorithms.
- Developed sensor fusion and IMU drift calibration algorithms supporting real-time biomechanical monitoring and device feedback control.
- Coordinated experimental scheduling and interdisciplinary research activities supporting publication and milestone delivery.
- Contributed to biomaterials research converting Miscanthus wastewater into functional materials supporting experimental design, data collection, and conference-level outputs.
- Contributed to peer-reviewed publication and technical reporting.  
Publication: <https://pubmed.ncbi.nlm.nih.gov/40347002/>

**BOOKKEEPER – CONCORDE ACCOUNTING AND TAX INC.** – 01/05/2024 – 31/08/2024 – GUELPH, CANADA

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Supported tax-season client processing, documentation verification, and administrative workflows in high-volume accounting environment.

- Processed tax documentation for 100+ clients ensuring accuracy and regulatory compliance.
- Maintained confidential financial records and documentation systems.
- Coordinated client communication and file tracking across accounting workflow systems.

**MUNICIPAL STUDENT LANDSCAPPER – CITY OF PICKERING** – 01/05/2022 – 31/08/2023 – PICKERING, CANADA

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- Maintained municipal parks and public green infrastructure following safety and quality standards.
- Supported scheduled maintenance across multiple public sites within field operations teams.

**FOOD SERVICE WORKER – MCDONALDS** – 01/10/2018 – 01/07/2021 – SCARBOROUGH, CANADA

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- Delivered high-volume customer service while maintaining food safety and quality control standards.
- Supported multi-station restaurant operations including front counter, kitchen, and drive-thru.

● **SKILLS**

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Microsoft Excel | establish daily priorities | manage staff | manage budgets | project management | write work-related reports | engineering processes | liaise with managers | Microsoft Office | Microsoft Powerpoint | Social Media | Python | Frameworks and Libraries: FastAPI, Open CV, Tensorflow, Keras, Pandas, Seaborn, Plotly, Streamlit | Node.js | JavaScript | REST API Development | Authentication Systems | React | Next.js | HTML | CSS | Tailwind CSS | Fullstack Application Development | Webpack | PostgreSQL | SQL | Redis | MariaDB | Data Pipeline Development | Docker | Linux | Git | Google Cloud Platform (GCP) | Google Cloud Run | Google Cloud Functions | Vercel | DigitalOcean | Render | Yarn | npm | AI Automation Integration | Scientific Software Development | Workflow Automation | ERP System Design | CRM System Development | Autodesk Inventor (CAD) | SolidWorks | Control Systems Programming | Embedded Systems Integration | Sensor Integration | Fluidics System Design | Test Engineering | MySQL

● **LANGUAGE SKILLS**

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Mother tongue(s): **ENGLISH**

Other language(s):

**UNDERSTANDING**

**SPEAKING**

**WRITING**

Listening

Reading

Spoken production Spoken interaction