

J a m e s - E d w a r d G r a y

Nanotechnology Engineering Student | University of Waterloo

INFO

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EDUCATION

BaSC – Nanotechnology Engineering

UNIVERSITY OF WATERLOO

2028

- Working towards a specialization in Nanobiosystems
- University of Waterloo Merit Scholarship (2023)

SKILLS

Programming Languages: C++, Python, Arduino, MATLAB, HTML, CSS, JavaScript

Software: GitHub, IBM Quantum Simulator, Qiskit, Anaconda, AutoCAD, SolidWorks, Machine Learning, HitFilm

Technical: Circuit design, soldering, welding, sound engineering, machining and hardware assembly, automotive and aircraft maintenance, 3D modeling

Materials Characterization: SEM, XRD, FTIR, Raman, Ellipsometry, TGA, DSC, mechanical and thermal testing of polymers, and nanomaterials

Biochemical Techniques: Biomolecule analysis, chemical synthesis, protein purification, enzyme kinetics, SEC, gel electrophoresis, bacterial transformation

CERTIFICATIONS AND AWARDS

WHMIS 2015 Certification, Aircraft Maintenance Engineering Course (AATC-AM) Graduation Certificate, Air Rifle Marksmanship Instructor Course Graduation Certificate, Cadet 6 years of Service Medal

PERSONAL INTERESTS AND INVOLVEMENT

Learning Languages: Chinese, Japanese, and French

Sports and Fitness: Competed in multiple biathlon and marksmanship competitions in my cadet career winning first place in my municipal area in 2019, 2020, and 2021, I'm a private trainer in personal fitness, currently in a competitive breakdancing club

Hobbies: Console and computer building and modifications (software and hardware), photoshop, content creation, videography and editing, learning to play the drums, consistent practice in guitar, vocals and piano

EXPERIENCE

Quantum Algorithms Research Student

University of Waterloo - Faculty of Engineering || Waterloo, ON | JAN - APR 2025

Focused on exploring quantum algorithms for solving ordinary differential equations (ODEs) using IBM's Qiskit software platform through use of Python and Anaconda. This role involved applying quantum computing principles to develop and implement innovative solutions for ODE problems, contributing to advancing the field of computational physics and engineering.

- Collaborated to create Variational Quantum Linear Solvers (VQLS) using Qiskit.
- Hosted presentations on top research papers, discussing latest advancements in quantum computing theory.

Design Team Contributor – BioMechatronics

University of Waterloo || Waterloo, ON | APRIL 2025 - PRESENT

Contributed to the design, coding, and 3D printing of prosthetic prototypes in a collaborative team environment. Also responsible for choosing and completing personal projects in a timely manner.

- Led a personal project through the Enable subteam to develop a guitar pick grip aid for a stroke survivor.
- Hands on experience with Arduino IDE (C/C++), connecting circuits with bio sensors, and 3D modeling tools such as, UltiMaker Cura and SolidWorks.
- Through sub team EMG fabric software and hardware, collaborating with group members to create an exoskeleton for grip strength.

Website Coordinator & Designer

Gray & Associates || Orangeville, ON | JUN - AUG 2024

Built and designed an interactive healthcare information website for: booking appointments, advertisement of products and services, and booking one-on-one consultations. My job was to lead and design the project using approved idea maps and wireframes.

- Exceeded employer expectations in performance and product standards.
- Took the initiative to teach myself programming languages HTML, CSS, and JavaScript, coding the website from scratch.

Marketing Representative – Home Maintenance Services

Student Works || Waterloo-Kitchener, ON | JUN - AUG 2024

Marketed services to potential clients in student run teams. Responsible for refining cold-pitching techniques, building client rapport in high-rejection environments, and meeting lead quotas of 2-3 quotes per shift.

- Challenged the standard, generating triple the quota consistently.
- Set a record high of 15 consecutive leads in one shift.
- Generated an overall average of 225+ leads over the season through door-to-door outreach.