

Aaron Anthony McGrath

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Professional Summary

Creative and disciplined Electrical Engineer with over 10 years of experience in multi-unit residential design, field engineering, and software development. Proficient in CAD tools (AutoCAD, Revit, SolidWorks) and coding (Swift, C++, Python) since 2012, with a proven track record of automating design processes and enhancing system reliability. Passionate about delivering innovative solutions in electrical systems, telecom messaging, and marine technologies, with strong collaboration and project coordination skills.

Key Skills

- **Technical Skills:** AutoCAD, Revit, SolidWorks, Excel, single-line drawings, shop drawings, circuit analysis, signal processing, electromechanics
- **Engineering Skills:** Electrical design, field engineering, drafting, electrical/building code compliance (cable sizing, fire safety, accessibility, transformer/generator sizing)
- **Coding/Software:** iOS development (Swift, Xcode, Combine, SDWebImage), HTML, CSS, JavaScript, Bootstrap, Jekyll, SQL, Python, C, C++, Atmel, Arduino, Linux, unit testing, UI testing, SPM, Firebase
- **Soft Skills:** Project coordination, teamwork, communication, priority management, initiative, problem-solving
- **Languages:** English (Fluent), French (Fluent)

Professional Experience

Electrical Designer

EFP Engineering, Halifax, NS | 2024

- Designed single-line drawings, floor layouts, smoke detectors, lighting, heating, and security systems for multi-unit residential projects (Penhorn, Prince Albert, Moffats II, Willow, Wheelhouse).
- Ensured compliance with electrical and building codes, including cable sizing, fire safety, accessibility, and transformer/generator sizing.
- Collaborated with developers, electricians, architects, and project managers to align designs with project goals.
- **Achievements:**
 - Developed Python script to automate receptacle layouts per electrical code, reducing design time by ~15%.
 - Received positive supervisor feedback for high-quality designs and effective collaboration.
- **Tools/Technologies:** AutoCAD, Revit, Python, Excel

iOS Developer

immediaC, Halifax, NS | 2022

- Developed client and customer iOS apps for home renovation management, interfacing with a central API for web-mobile coordination.
- Wrote Swift code using Xcode and Combine framework, handling edge cases for communication failures.
- Collaborated with web and Android teams in daily standups and sprint planning, including planning poker for sprints.
- **Achievements:**
 - Launched both apps, earning client satisfaction for functionality and user experience.
 - Optimized image loading using SDWebImage framework, implementing custom cache limits and progressive loading to reduce memory usage by 20% and improve gallery performance.
- **Tools/Technologies:** Swift, Xcode, Combine, SDWebImage, APIs

Software Engineer

Sigmast Communications, Bedford, NS | 2020

- Contributed to RCS protocol implementation for a telecom messaging platform, enhancing group chat and media sharing features in a C++ microservice architecture (50+ interconnected apps).
- Wrote and tested code using the Expect framework, managing SQL databases and collaborating with DevOps, security, and testing teams.
- **Achievements:**
 - Fixed a race condition in group chat message synchronization, ensuring consistent message ordering and reducing support tickets by 10%.
 - Improved system reliability and maintainability by resolving bug tickets and writing comprehensive tests.
- **Tools/Technologies:** C++, SQL, Expect framework, Linux

Field Engineer

Cahill Industrial, St John's, NL | 2017

- Managed receiving and inventory of structural steel, large cables, synchronous condensers, and transformers for HVDC project using detailed Excel spreadsheets.
- Coordinated with electrical, HVAC, and plumbing trades, planning activities with supervisor to optimize construction workflows.
- Worked in challenging winter conditions (cold, snow, long hours).
- **Achievements:**
 - Resolved scheduling conflict between electrical and HVAC teams by revising installation sequence, minimizing downtime and maintaining project timeline.
 - Recognized by supervisor for maintaining schedule during 3-month winter phase under adverse conditions.
- **Tools/Technologies:** Excel

Engineer

Aquatron Lab, Halifax, NS | 2016

- Led CAD design using SolidWorks for a rotating aquaculture filter prototype with overflow and overcurrent sensors, collaborating with a self-organizing team of three and lab staff.
- Wrote C code for Atmega chip control system, leveraging interrupts and timers for prototype functionality.
- **Achievements:**
 - Drove initiative on CAD design, enabling rapid iteration and delivery of a functional prototype.
 - Supported lab research goals through successful prototype development [Placeholder: specify research impact, e.g., enabled specific experiments].
- **Tools/Technologies:** SolidWorks, C, Atmel (Atmega chip)

Education

B.Eng in Electrical Engineering

Dalhousie University, Nova Scotia | 2016

- Relevant Coursework: Circuit Analysis, Analog and Digital Signal Processing, Electromechanics, Electromagnetic Waves, Digital Circuits, Microprocessors, Design Projects, Economics, Statistics, Calculus, Chemistry, History of Science Fiction, Vector Calculus, Statics, Assembly, C, C++

Certifications and Professional Development

- **Revit** | Udemy | 2024
- **Safety and First Aid Training** | St. John Ambulance | 2016
- **Professional Development:** Pursuing P.Eng. eligibility with Engineers Nova Scotia

Additional Information

- **Languages:** English (Fluent), French (Fluent)
- **Professional Affiliations:** Pursuing P.Eng. with Engineers Nova Scotia
- **Hobbies/Interests:** Coding personal projects, CAD design, 3D printing, electric guitar, piano, dog
- **Note:** Available for roles requiring travel (valid driver's license) and hybrid work arrangements.