

# Matthew J. McCallum

orbit9112@gmail.com

[LinkedIn](#) | [Portfolio](#) | [GitHub](#)

## EXPERIENCE

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### ThinkOrbit Innovations Inc.

*Founder & Developer*

- Designed tailored software and SEO solutions, improving client engagement and rankings.
- Consulted businesses to streamline operations and boost efficiency through innovative tech solutions.
- Demonstrated expertise in developing AI-powered software solutions for operational efficiency.

### WithYouWithMe Services Inc.

*Software Developer*

- Modernized legacy systems for the Canadian Armed Forces, resulting in enhanced performance and improved cybersecurity.
- Automated workflows and led cross-functional team collaborations, delivering high-quality software solutions.
- Built APIs to connect backend legacy systems with modern frontends.
- Applied AI methodologies to improve software functionality and automation processes.

## PROJECTS

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### ErdosChatBot (React)

- Built a chat application using Express.js and OpenAI's API, deployed on Vercel for seamless communication capabilities.
- Integrated natural language processing features for intelligent, responsive conversations with users.
- Implemented real-time messaging and notification systems, enhancing user engagement and interactivity.
- Optimized the app for performance and scalability, ensuring smooth operation even with high user traffic.

### **EcoTrack** (Streamlit) *(In Progress)*

- Developing a carbon tracking app using Python and Streamlit to help users monitor and reduce their carbon footprint.
- Integrating a reasoning engine to provide enhanced, personalized sustainability recommendations based on user data.
- Implementing data visualization features, enabling users to track their progress with intuitive charts and graphs.
- Utilizing third-party APIs for real-time data integration, enhancing the app's ability to offer up-to-date insights on environmental impact.

### **SolarShift** (Flask) *(In Progress)*

- Developing a solar panel placement tool using Flask, integrating the OpenWeather API for weather data and forecasting.
- Incorporating geospatial mapping features to optimize solar panel placement based on geographical factors and environmental conditions.
- Designing an intuitive user interface for easy interaction with the app, providing real-time insights on optimal panel locations.
- Implementing data analysis and visualization tools to help users assess solar energy potential in different locations.

### **Instructional Tutorials: "Let's Build a Web App From Start to Finish - A Beginner's Guide to Cursor + Claude-3.5-Sonnet"** *(Completed & Published on Oxford University's AI Course)*

- Published a series of step-by-step tutorials guiding users through the process of building a simple web application using Claude-3.5-Sonnet and ChatGPT-4.0 with Canvas.
- Demonstrated how to leverage AI technologies to design and develop a basic web app, with clear instructions for each development phase.
- Covered key concepts like AI-driven code generation, interactive design with Canvas, and working with Claude-3.5-Sonnet.
- Provided practical exercises, enabling users to apply the concepts in real-time while building their own web applications.

### **Portfolio Website** (HTML, JavaScript)

- Showcases professional projects, skills, and accomplishments in a fun 90's-themed design, built and hosted using Git Pages for a fast, accessible online portfolio.

## **EDUCATION**

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### **Erdos Research**

#### *AI and LLM Projects (Ongoing)- 2024-Present*

- Coursework: Engaged in hands-on projects involving large language models (LLMs), focusing on practical applications and AI research in collaboration with a group of dedicated experts.

**Algonquin College, school of advanced technology - Ottawa, ON***Diploma in Computer Programming- 2022*

- Coursework: Software architecture, operating systems, algorithms, design patterns, API's, microservices, database design, mobile application development and multi-threaded programming.

**Algonquin College- Ottawa, ON***Diploma in Law and Security- 2007*

- Built foundational skills in regulatory compliance and security protocols.

## SKILLS

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Java, Python, C++, C#, JavaScript, SQL, PL/SQL, Git, Jira, Toad for Oracle, Docker, AWS, Azure, SQL Server, Node.js, MongoDB, Oracle, PostgreSQL, React Native, Flask, TensorFlow, PyTorch, Keras

## CERTIFICATIONS & AWARDS

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- **Coursera:** Supervised Machine Learning Certification
- **Tech Design Sprint:** Winning Solution- 2022

## ADDITIONAL EXPERIENCE

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**Construction Career Transition- 2020**

- Successfully transitioned from construction to software development after completing intensive programming training.
- Transferred project management, troubleshooting, and attention-to-detail skills to software engineering challenges.

## SECURITY CLEARANCE

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- Holds Secret Security Clearance, enabling work on high-security projects.