Matthew Grech

Matthew.grech@mail.utoronto.ca|Linkedin: Matthew Grech | GitHub: MEGmax

EDUCATION

Bachelor of Applied Science in Computer Engineering: University of Toronto Sept. 2021 – May 2026
Relevant Coursework: Data Structures and Algorithms, Computer Networks, Fundamentals of Deep Learning

TECHNICAL SKILLS

Programming Languages: C/C++, Python, TypeScript, JavaScript, Rust, C#, Java, Verilog, ARM Assembly
Other: React, Node.js, ASP.NET, Jest, Express, PyTorch, Git, DevOps, Keras, Azure Portal, Linux/Windows, libcurl, Next.js

WORK EXPERIENCE

Nuclear Promise X

Software Engineering Intern (May 2024 – Present)

- Replaced companies QA software with **React+Next.js** web-app that adheres to nuclear compliance standards, which is projected to reduce company costs by $200K over 4 years. Designed ERDs and implemented secure, scalable CI/CD pipelines using GitHub Actions to automate Docker image builds and deploy applications to Azure Container Apps. Improved deployment speed by 30% and enhanced workflow reliability.
- Created a full-stack invoice manager application for the operations department using **React, Node.js**, **Express**, and **OAuth2 + JWT tokens** for secure session management, automating 80% of the invoicing process and improving productivity for over 10 team members.
- Developed and resolved critical issues in ECHO, a nuclear component health reporting tool, leveraging **React** and **Node.js**, and **T-SQL** for database management, improving routing logic and backend workflows, resulting in a 6% increase in overall system efficiency.

Ramuri Science Inc. (Startup)

Director of Engineering (May 2023 - May 2024)

- Participated in early stages of this startup securing funding from Microsoft and the University of Toronto.
- Directed team that developed an AlexNet based shopping recommendation model with a CNN architecture.
- Designed and developed the product recommendations page using **React** and **Node.js** which became our flagship feature acquiring 82% more users.

Questica Inc.

Software Engineering Intern (May 2022 – Aug. 2022)

- Developed an integration dashboard with **.NET 6** and **C#** to centralize the customer integration process for the IT department, decreasing data manipulation times by 50%.
- Created and improved **T-SQL** scripts for internal reporting, decreasing report-building times by 40%.

PROJECTS

Graphical Information System (Google Maps Replica)

- **C++ (STL)** is used for the majority of the project, **Python** for algorithm testing, **libcurl** and **EZGL** employing the UI.
- The application's path-finding algorithm placed 2nd overall (100+ teams) in competition to find the most efficient delivery route (travelling courier problem) by employing a mix of search algorithm such as Dijkstra and A*.

Weather Forecasting Deep Learning Model

- Developed a Recurrent Neural Network, specifically with an LSTM architecture with the capabilities to accurately predict multiple weather metrics, 24 hours ahead of time, including temperature within 1.37ºC on average.
- Used **SQL, Pytorch, Keras, NumPy** and **TensorFlow** for data processing and model architecture.