

David Crimi

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Education

York University

B.Sc., Hons. Computer Science

August 2025

Toronto, Ontario

Experience

Hitachi Rail

January 2025 – present

Software Analyst Intern

Toronto, Ontario

- Initialized CI/CD pipelines for two major projects in **Jenkins**, as well as optimizing existing pipelines to achieve a **40%** reduction in execution time.
- **Dockerized** a critical build environment for development and software testing (including Jenkins workflows), producing technical artifacts adopted across the entire project.
- Bootstrapped a test framework for legacy C codebase for train controllers.

Projects

FourthJudge.io | React.js, Fastapi, Java, Redis, AWS SES, AWS EC2, PostgreSQL, Nginx

May 2025

- Designed and deployed a **cloud-native distributed system** on **AWS (EC2, SES)** for **real-time** UFC fight voting, score sharing, and historical data access.
- Engineered a **high-throughput distributed data pipeline** composed of a **Java Spring Boot** polling service, **Redis Pub/Sub**, and an **Express.js** SSE service, enabling **low-latency delivery** to clients and designed to efficiently serve **thousands of concurrent users**.
- Built a performant, responsive frontend in **React.js with TypeScript**, leveraging **Zustand** for efficient global state management, **optimized rendering for high-frequency live updates**, and a user-friendly UI/UX to keep **real-time fight data** and voting interactions smooth under heavy load.

Impactify | Next.js, Django, PostgreSQL, Docker

October 2024

- Utilized **Python with Django** to build **RESTful APIs** to integrate with an IoT-based brain health monitoring helmet, enabling **real-time** impact data collection.
- Developed user session management, coach dashboards, and interactive data visualizations using **Next.js**, **HTML/CSS**, and **TypeScript**, integrating with **Django RESTful APIs** and leveraging **PostgreSQL** for **secure, scalable and structured** data storage.
- **Achieved 1st place overall among 400+** participants at Hack the Valley by delivering a **full-stack** solution that **solves real-world issues** in contact sports, empowering coaches and athletes to make data-driven safety decisions.

JSON Parser | C++

Sep 2024

- Designed and implemented a lightweight JSON parser in modern **C++17**, using recursive descent parsing and an **Abstract Syntax Tree (AST)** to represent complex nested data structures.
- Developed a modular parsing pipeline with tokenization, syntax analysis, and serialization components, emphasizing clean architecture, error handling, and performance.
- Optimized memory and parsing efficiency through AST nodes, move semantics, and minimal heap allocations, achieving competitive speed compared to standard JSON libraries.

Certifications

AWS Certified Developer Associate | Amazon Web Services

June 2024

- Demonstrated proficiency in developing, deploying, and debugging cloud-based applications using AWS services and best practices for application development.

Meta Backend Developer | Coursera

August 2024

- Completed comprehensive program covering Python, Django, APIs, databases, and version control, emphasizing backend development principles and industry best practices.

Technical Skills

Programming Languages & Libraries: Python, Java, C++, C, HTML/CSS, JavaScript, SQL, NumPy, Pandas, Matplotlib, Scikit-learn

Frameworks & Technologies: Spring Boot, Express.js, Django, FastAPI, React, Flask, Next.js, Linux, Git, JUnit, Amazon Web Services

Databases & DevOps: MySQL, PostgreSQL, MongoDB, Neo4j, GitHub Actions, Jenkins, Docker