Hamza Arshad

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Education

Toronto Metropolitan University **2026**

Bachelors of Computer Engineering

Experience

Full-Stack Developer **October 2019 – October 2021**

Volunteering Peel

- Maintained Typescript infrastructure to create seamless interaction to over **1000+** active users.
- Ensured websites and pages were optimized for all screen orientations and devices using responsive design techniques.
- Reduced deployment time by **50%** by implementing and managing CI/CD pipelines using **Jenkins** and **GitLab** CI/CD.

Programming Instructor **June 2021 – July 2021**

McMaster Engineering - Venture Academy

- Curated programming content for summer camp covering **Python, Java, Git** and **Jupyter Notebook**.
- Developed complex challenges and projects for students to apply concepts of **algorithms**, **data structures** and **data science**.

Projects

ESPN API Wrapper | *Python, Flask*

- Designed a custom **Python** API wrapper to automate extraction of 15+ key performance indicators, reducing manual analysis time by **80%**.
- Applied advanced **Pandas** and **NumPy** techniques to analyze 10,000+ player records, improving statistical accuracy of performance metrics by **25%**.
- Engineered an object-oriented API architecture using **encapsulation** and **inheritance**, enabling modular code reuse and cutting integration time for new endpoints by **50%**.

CompoDom | *Python*

- Created a web scraper using **Python** and **BeautifulSoup** to extract domain pricing data from multiple registrars.
- Implemented data analysis and sorting techniques using **Pandas** to identify cheapest registrar available for a given domain.
- Created efficient **ETL pipelines** to extract, clean, and transform data, resulting in notable enhancements in data quality.

Currency Simulator | *TypeScript*

- Integrated Webhook and Message **API's** to create a rich and interactive Discord Bot, increasing user engagement in communities by **40%**
- Designed an efficient database system using the **Sequelize ORM**, resulting in a **50%** reduction in data retrieval and storage time.
- Deployed on **Heroku** and **AWS** to guarantee **99%** uptime and availability, resulting in sustained user engagement.

G1Prep | *TypeScript, React, Node.js, MySQL, Fastify*

- Utilized web scraping and APIs to devise a tailored study aid for G1 students.
- Employed **Node.js** and **Fastify** to implement asynchronous routing and achieve a **40%** reduction in API runtime.
- Constructed interactive flashcard-style format interface to increase user engagement and interaction.
- Implemented error handling and data validation techniques to guarantee the stability and resilience of the API wrapper.

Achievements

Canadian Computing Competition **February 2021**

Centre for Education in Mathematics and Computing *University of Waterloo*

- Ranked top **25%** out of **2500+** contestants in Senior Division of Competition

Technical Skills

Languages: Python, Java, JavaScript, TypeScript, C, C++
Frameworks: React, Node.js, WordPress, Docker, Flask, Fastify
Databases: MongoDB, Firestore, PostgreSQL, SQLite, MySQL
Libaries: Socket.io, Matplotlib, Pandas, BeautifulSoup, Tensorflow, NumPy