

RONAV ROY CHOWDHURY

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Education

McMaster University

Bachelor of Engineering in Biomedical and Software Engineering

SEPT. 2022 - APR. 2027

Hamilton, ON

- **1st Place** - McMaster Engineering Hackathon (NOV 2023): Developed an ML-driven solution within 6 hours.

Work Experience

FULL STACK DEVELOPER | MONSTRARTITY

APR. 2024 - PRESENT

- Designed and optimized various website pages and features using **HTML**, **CSS**, and **JavaScript** to enhance user experience.
- Implemented **Python-based automation workflows** leveraging **GCP** to streamline large-scale data analytics.
- Boosted site SEO and performance by over **200%** leveraging tools like **Google Lighthouse** and **Google Tag Manager**.
- Ensured site reliability through comprehensive QA testing, focusing on **API load balancing** and **scalability**.
- Collaborated in **Agile sprints** and frequent code reviews focusing on secure, maintainable code delivery.

Projects

NOVUS CYBERSECURITY | AWS RDS, AWS KMS, PostgreSQL, React, TypeScript

NOVEMBER 2024

- Deployed secure AWS infrastructure using **AWS RDS**, **Secrets Manager**, and **AWS KMS** to manage access control.
- Utilized **AWS Secrets Manager** with **Python** scripts to securely manage and control access to **AWS RDS**, and provide client-side encryption using the Blowfish Encryption Algorithm to protect data in transit.
- Optimized API integrations and load balancing using **Python** for high availability and fault tolerance.
- Utilized **PostgreSQL** for database schema design and query optimization.
- Created a password management system in **C** that enforced strict password creation guidelines and provided real-time feedback on password strength.
- Developed a responsive front-end using **React**, **TypeScript**, and **Tailwind CSS**, integrating **Google OAuth** for secure login and displaying multi-factor authentication (MFA) capabilities to enhance user security.

NBA PLAYER CLASSIFIER | OpenCV, Python, Keras, Scikit-learn, JavaScript, Flask

SEPTEMBER 2023

- Developed **ML pipeline** using **Computer Vision** from **OpenCV** and **Python** to classify 600+ images.
- Implemented **Computer Vision** from **OpenCV** and **haar cascade** to isolate specific facial features in a given image of a player.
- Utilized **GridSearchCV** with **Keras** and **Scikit-learn** to test various classification **ML** models (**random forests**, **XGBoost**, **logistic regression**, **SVM**), hypertune their parameters, and find the optimal model.
- Deployed a Flask web app for real-time image processing and classification.
- Designed a UI with **Bootstrap**, and **JavaScript** to communicate with the **Flask** server.

SCRIBBL.AI | HTML/CSS, JavaScript, GCP, React, Firebase

FEBRUARY 2024

- Developed a canvas in **Vanilla JS** and **HTML/CSS** to allow the user to draw letters and send them to **Cloud Storage**.
- Developed a handwriting recognition app using **GCP Vision API** for real-time inference and **React** for dynamic UI.
- Utilized **Firebase** to keep track of user attempts for **50+ characters** and **4 achievement levels**.

P.E.P.P.E.R. AI | GCP, Next.js, TypeScript, HTML/CSS, React

JANUARY 2024

- Collaborated on a **serverless architecture** using **GCP Cloud Functions** to process real-time user requests.
- Spearheaded the front-end development initiative by creating a web app to display and interact with PEPPER through the amalgamation of **Next.js**, **React**, **TypeScript**, and **HTML/Tailwind CSS**.
- Refined and optimized responses generated by the **OpenAI API** using **prompt engineering** techniques to enhance the model's performance in generating accurate and human-like responses to any query.

Technical Skills

Programming: Python, C, TypeScript, React, Node, SQL (Postgres), Java, HTML/CSS, Bash

AI/ML: TensorFlow, Pandas, NumPy, SciPy, Keras, Scikit-learn, PyTorch, Computer Vision (OpenCV), NLP

Cloud Services: AWS (RDS, Fargate, CloudWatch, SQS, DynamoDB, Lambda, CloudFormation, ECS, S3), GCP (Cloud Functions, Vision API)

Tools: Docker, Git

Relevant Coursework: Software Development, Network Basics, Distributed Systems, Concurrent System Design, Computer Architecture, Algorithms, Databases, Bash Scripting, Operating Systems

Certifications

- **AWS Solutions Architect – Associate** (in progress)
- **Advanced Learning Algorithms**
- **Supervised Machine Learning: Regression & Classification**
- **Python for Data Science & Machine Learning Bootcamp**

SEPTEMBER 2023

SEPTEMBER 2023

JULY 2023