

MAHDI MOEINI

NL, Canada (Willing to Relocate)

(709) 699-9147

mmoeini@mun.ca

[linkedin.com/in/mmoeini](https://www.linkedin.com/in/mmoeini)

m-moeini.github.io

WORK EXPERIENCE

Research Assistant, *Memorial University of Newfoundland*

Sep 2022 – Dec 2024

- Explored the possibility of controlling a wheelchair through singing imagery by designing a Brain-Computer Interface (BCI) experiment to collect EEG time-series datasets from 15 subjects
- Enhanced the efficiency of data analysis by developing a comprehensive EEG data processing pipeline using MATLAB and Python for data cleaning and ETL processes
- Increased the classification accuracy by 10% through effective feature optimization by implementing the Filter Bank CSP for feature extraction and the mRMR algorithm for feature selection
- Achieved 85% accuracy in classifying EEG signals using deep learning and machine learning models (CNNs, SVM, XGBoost), and provided insights into model performance through statistical analysis
- Boosted the data analysis speed by 50% by building an automated pipeline on Compute Canada Cloud

[GitHub Code](#)

Tech Stack: NumPy, Pandas, Scikit-learn, PyTorch, TensorFlow, Matplotlib, Seaborn, SciPy

Software Developer, *Toranj Innovation Technologies*

May 2021 – Jun 2022

Toranj Innovation Technologies is a health tech company specializing in creating software solutions for the healthcare industry, serving over 5000 customers to manage financial tasks such as claims processing.

- Expanded the system scalability by developing fault-tolerant MVC microservices using Java and Spring Boot
- Accelerated the speed of the manual testing process by 3 times via implementing User Acceptance Tests RESTful APIs, and integrating them with the [FitNesse](#) framework
- Utilized JPA and SQL in PostgreSQL databases for secure data storage and retrieval

Tech Stack: Java, SQL, PostgreSQL, Spring Boot, JPA, Git, Microservice Architecture, CI/CD Pipelines

Software Developer, *Hoom Co.*

Apr 2020 – Mar 2021

Hoom is a smart home technology company focused on developing IoT solutions for home automation.

- Improved the smart home functionality and user experience by collaborating with the firmware team to develop an IoT hub similar to Amazon Alexa, using C and C++
- Increased the command transmission speed for communication between the IoT hub and smart home devices by 25% by replacing the HTTP protocol with MQTT

Tech Stack: C, C++, Git, Object Oriented Programming (OOP), SOLID Programming, Agile

PROJECTS

- **[Web Scraping Project](#):** Reduced manual data entry time by 75% by developing a Python-based web scraping script with Selenium to automate TAs' tasks, such as grade entry, on the web platform of Memorial University
- **[Mini-Marketplace](#):** Increased system scalability by implementing a microservice architecture for a mini online shop that could serve 1000 customers using Spring Boot, JPA, JWT, and MySQL
- **[Fundamental Image Filters](#):** Guided beginners in understanding fundamental image filters and resizers by providing detailed documentation on how they work and how to build them from scratch using Python

EDUCATION

Master of Engineering- Computer Engineering, *Memorial University of Newfoundland* **Sep 2022 – Dec 2024**

- **Thesis:** Investigation of Different Motor Imagery Tasks in Continuous Control EEG-Based BCI

Bachelor of Science - Electrical Engineering, *Iran University of Science and Technology* **Sep 2017 – May 2022**

- **Thesis:** Design and Implementation of an IoT Hub Working with MQTT Protocol

SKILLS

- **Programming Languages:** Python, Java, C++, MATLAB, SQL
- **AI/ML:** Data Science, Data Manipulation, Data Visualization, Statistics, Machine Learning, Deep Learning
- **Software Development:** RESTful APIs, Microservice Architecture
- **Cloud Platforms:** AWS (EC2, S3, Lambda)

CERTIFICATIONS

- AWS Certified Cloud Practitioner
- Coursera Machine Learning Specialization