

MAHDI MOEINI

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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 Electroencephalography (EEG) time-series datasets from 15 participants
- 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
- Enhanced the data quality and consistency by developing a data preprocessing pipeline using MATLAB and Python
- Increased classification accuracy by 10% using efficient feature extraction and selection techniques (CSP, mRMR)
- Improved data analysis speed by 50% by building an automated pipeline on Compute Canada Cloud ([Code](#))
- **Tech Stack:** Python, NumPy, Pandas, Scikit-learn, PyTorch, TensorFlow, Matplotlib, Seaborn, SciPy

Software Developer, *Toranj Innovation Technologies*

May 2021 – Jun 2022

Toranj is a health tech company specializing in creating software solutions for the healthcare industry.

- Expanded the system scalability by developing fault-tolerant MVC microservices using Java and Spring Boot
- Simplified ETL workflows by utilizing Object-Relational Mapping interfaces, eliminating the need for direct queries
- Doubled the speed of User Acceptance Testing process by implementing RESTful APIs integrated with FitNesse
- Contributed to software development in a CI/CD environment by utilizing Git for version control
- **Tech Stack:** Java, Spring Boot, JPA, SQL, PostgreSQL, Git, Microservice Architecture

Software Developer, *Hoom Co.*

Apr 2020 – Mar 2021

Hoom is a smart home technology company that develops 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++
- Boosted the communication speed between the Hub and smart devices by 25% by replacing HTTP with MQTT
- Delivered incremental software releases as part of a Scrum team, aligning with Agile best practices
- **Tech Stack:** C, C++, Bash, Linux, Git

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 Memorial University web platform
- **Mini-Online-Shop:** Enhanced the scalability of a mini-online shop by upgrading from monolithic to microservice architecture, enabling it to serve 1,000 customers using Spring Boot, JPA, JWT, and MySQL

EDUCATION

- **Master's Degree - Computer Engineering,** *Memorial University of Newfoundland* Sep 2022 – Dec 2024
- **Bachelor's Degree - Electrical Engineering,** *Iran University of Science and Technology* Sep 2017 – May 2022

CERTIFICATIONS & SKILLS

- **Certifications:** AWS Certified Cloud Practitioner, Coursera Machine Learning Specialization
- **Programming Languages:** Python, Java, C, C++, MATLAB, SQL
- **Industry Skills:** Data Science, Data Manipulation, Data Visualization, Statistics, Machine Learning, Deep Learning, Object-Oriented Programming (OOP), AWS (EC2, S3, Lambda)