BORNA SADEGHI

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EDUCATION

McMaster University

Sep 2020 - Apr 2025

B.Eng, Computer Engineering (Co-op)

Cumulative GPA: 3.6 / 4.0

RELATED SKILLS

Skills and Technologies

3D printing, Airflow, Arduino, CAD, GCP, Git, Hardware prototyping, Keras, Linux, Neural networks, Node.js, PyTorch, Testing

Languages

Python, SQL, HTML, CSS, JS, Java, C, C++

EXPERIENCE

Data Scientist Intern *at Geotab*

Jan 2022 - Dec 2022

- Identified **15**+ major data quality issues in real-world vehicle data from a global telematics fleet of **over 3 million vehicles**
- Captured these issues using detailed SQL logic, and created visualizations to help identify issue occurrence patterns
- Passed these analytics to the embedded team to help them locate bugs in GO device firmware and improve data quality
  - My contributions in the past year have prevented **several billion** occurrences of erroneous data logs, with some issue types appearing **94% less often** compared to when I started
- Additionally, worked on an automated alerting chatroom for when data quality changes significantly across firmware versions

Project Team Member *at McMaster AI Society*

Sep 2020 - Apr 2021

- Performed academic research on state-of-the-art machine learning models to reference in our own work
- Replicated the AlexNet CNN in Keras, for a convolutional discriminator as part of a style transfer GAN that makes regular images look like Claude Monet paintings
- Tweaked the model's hyperparameters (training time, configuration and properties of layers) to improve the quality of the results
- Worked with a small team using agile/scrum methodologies, where each team member developed a different part of the GAN

Backend Developer Intern *at CheaprEats*

Aug 2020 - Nov 2022

- Designed and optimized Node.js server architecture and GraphQL API for a Receipt Builder app targeting 20+ food vendors
- Wrote and optimized seeder scripts to generate mock testing data for a MongoDB database
- Demonstrated consistent usage of agile methodologies through active communication with a small team

PROJECTS AND INITIATIVES

Co-Authored Machine Learning Research Paper

Aug 2021 - Dec 2022

- Worked with a Ph.D. student over the course of 17 months to co-author a research paper about using a feedforward machine learning model to predict the coefficient of friction in ring compression tests
- Played an essential role in the machine learning component of the paper, and dramatically increased my knowledge of data collection, feedforward neural networks, model hyperparameters, testing, and validation of predicted results
- Paper was released to Vol. 180 of Tribology International, a major tribology (friction studies) journal
- We plan on writing another paper for our improvements, which can delve into feature selection and generation of a mathematical formula, among other refinements
  https://www.sciencedirect.com/science/article/pii/S0301679X22007691

Homemade Chess Clock

Aug 2021 - Dec 2022

- Programmed an ATMEGA328P microcontroller to control a chess clock with two LED displays and four input buttons
- Recycled a mobile power bank to provide power to the chess clock circuit and allow for charging
- Designed buttons and enclosure from scratch with CAD using Autodesk Inventor
  https://bornasadeghi.github.io/chess_clock.html

CERTIFICATIONS

Linkedin Learning

- Python Data Analysis *Aug 2021*
- PyTorch Essential Training: Deep Learning *Aug 2021*
- Node.js: Real-Time Web with Socket.io *Jan 2021*
- Learning Node.js *Jun 2020*
- Learning React.js *Jun 2020*
- Learning Vim *Feb 2021*