

SIDNEY LA FONTAINE

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PROFILE

Data Science professional interested in data-driven analytical solutions to everyday problems. Experienced building Machine Learning, Graph Algorithms, and Natural Language Processing (NLP) solutions to real-world problems. Achieved recognition for leadership skills and ability to effectively communicate technical principles to a broad audience.

WORK EXPERIENCE

Autonomous Driving and Algorithms Research Co-op **NDS2 Lab Northeastern University, Funded by Toyota InfoTech**

January 2022 – July 2022

- Researched Connected and Autonomous Vehicle (CAV) security issues
- Wrote heuristic graph algorithms targeting shortest paths to simulate traffic disruption attacks against CAVs in real city transportation graphs
- First-authored [Alternative Route-Based Attacks in Metropolitan Traffic Systems](#) paper. Selected to publish and present at the 52nd IEEE/IFIP International Conference on Dependable Systems and Networks (DSN).

Natural Language Processing Analyst Co-op **Genentech**

January 2021 – July 2021

- Utilized NLP techniques to extract structured data from text to connect biological research topics and authors to drive future biology research
- Applied BERT Machine Learning Language Model and rule-based NLP algorithms to over 36 million PubMed abstracts to execute Name Entity Recognition and Relation Extraction tasks
- Designed and built graph database on AWS EC2 instance using Neo4j containing tens of millions of biological entities and relationships between them extracted from PubMed abstracts and public data

Teacher's Assistant for Fundamentals of Computer Science 1 **Northeastern University, Boston and London Campus**

January 2019 – December 2022

- Lectured up to four weekly lab sections of 30 to 101 students on principles of programming, such as representing data in code and recursion
- Collaborated with course professor to design course materials
- Conducted office hours and tutored students
- Hired as full-time Teacher's Assistant for Fundamentals course at Northeastern University's London campus, Fall Semester 2022

PROJECTS AND VOLUNTEERISM

Bipedal Walker

- Implemented Monte Carlo Learning, Q-Learning, and Twin Delayed Deep Deterministic Policy Gradient (TD3) algorithms in the OpenAI Bipedal Walker environment to teach the robot how to walk and run

Predicting Extent of Sea Ice Cover

- Implemented regression and neural networks models to predict the extent of sea ice cover from important climate features such as the average monthly global temperature and CO₂ levels

Volunteer GED Math Tutor, X-Cel Education

September 2018 – May 2019

- Taught high school-level math to adults pursuing a high school equivalency degree

EDUCATION

Northeastern University

Graduating May 2023
Bachelor of Science in Data Science
Minors in Mathematics and Philosophy
GPA: 3.87/4

Awards

- Honors Program
- Dean's List 8 semesters
- Dean's Scholarship

Relevant Courses

- Machine Learning and Data Mining
- Practical Neural Networks
- Algorithms and Data
- Database Design
- Statistics and Stochastic Processes
- Calculus 2 & 3
- Information Visualization
- Object Oriented Design

High School Diploma

The Kent School

2014-2018

Awards

- Cum Laude Society
- High Honor Roll 8 semesters

TECHNICAL SKILLS

- Python
- Java
- SQL
- JavaScript
- R
- C++
- AWS
- Neo4j
- Scala
- MongoDB
- Redis
- HTML
- CSS
- Docker
- Tableau