

## Education

**Master of Engineering in Electrical and Computer Engineering**  
University of Waterloo, Canada

09/2022 – 01/2024

**Bachelor of Computer Science with Honours**  
Dalhousie University, Canada

09/2014 – 09/2019

- **Academic Accolades:** Dean's List

## Research Experience

### Research Interests:

- Computer Vision, Deep Learning, LLM, Cloud Computing, Distributed Systems

**Publication:** From theory to practice: insights and hurdles in collecting social media data for social science research

05/2024

- Co-author (contributed on the data part)

**Undergraduate Honours Thesis:** On the Accuracy & Complexity of Spam User Detection Algorithms for Social Networks

09/2019

- Advisor: Prof. Qiang Ye (Faculty of Computer Science, Dalhousie University)

## Projects

**Backtesting Booster: A Self-Adaptive Solution for Accelerating Trading Strategies using Just-in-Time compiler**

12/2023

Technologies used: JIT Compilation, EUREMA, PyPy

- **Developed a self-adaptive system to accelerate the execution** time of trading strategies using a Just-in-Time compiler (JIT).
- **Implemented architecture-based adaptation** with Executable Runtime Megamodels (EUREMA), effectively improving execution time while maintaining reasonable memory usage.
- Conducted experiments that demonstrated the system's effectiveness in accelerating trading strategies, particularly for the crossover strategy.

**Dynamic Hand Gestures Recognition**

04/2023

Technologies used: Deep Neural Networks, PyTorch

- **Authored a comprehensive review paper** on the use of deep neural networks for dynamic hand gesture recognition, advancing the understanding of machine learning applications in human-computer interaction.
- **Investigated a variety of CNN architectures**, including 3D CNN, lightweight CNN, and fine-tuned CNN, as well as LSTM and RNN, to evaluate their performance and efficiency in recognizing dynamic hand gestures.
- **Identified and analyzed critical gaps** in existing methodologies, particularly focusing on challenges related to data availability and quality, computational resource demands, transferability of models, and the ability to process data in real-time.

**SAT Solver Development**

01/2023

Technologies used: BCP, DPLL algorithm, Tseitin's Transformation

- **Developed the SAT solver** to assess whether input logical formulas are satisfiable (SAT) or unsatisfiable (UNSAT), enhancing the efficiency of logical computations in applications.
- **Implemented the basic DPLL algorithm** integrated with Boolean Constraint Propagation (BCP), demonstrating adeptness in algorithm optimization and advanced computational techniques.
- Utilized Tseitin's transformation **to convert original non-CNF formulas into equisatisfiable CNF formulas, streamlining the SAT solving process and improving formula evaluation accuracy.**

## Professional Experience

**Cloud Microservices Application Developer**

09/2019 to 09/2022

IBM – Bedford, NS, Canada

- Implemented back-end rule engine to build solutions for different types of banking business complications.
- Managed and developed RESTful APIs containing swagger-based interface for more than 8 services throughout duration of project.
- Applied Redux Middleware in web application to retrieve data and integrate between server and client sides.
- Led API lifecycle development, managing software development while ensuring functionality of code.
- Gained extensive knowledge in software such as Java Spring Boot, Kubernetes, Netflix Zuul, React and Redux.

**Web Developer [Co-op]**

01/2019 to 04/2019

The Chronicle Herald – Halifax, NS, Canada

- Skillfully leveraged technical proficiency in Technical Stack including Python, Django, RESTful API, Git and Agile.
- Operated alongside product owner to gather additional information on business and functional requirements; wrote high quality technical documentation for better code maintenance and internal training.
- Designed and developed backend RESTful API based on Django framework, utilizing pair programming approach to ensure high quality code.

- Implemented unit and integration testing suites to assess product functionality and performance.

#### **Data Analyst [Co-op]**

09/2018 to 12/2018

**The Chronicle Herald** – Halifax, NS, Canada

- Expertly debugged existing ETL processes and facilitated performance tuning to fix bugs.
- Developed new ETL Pipelines to extract data from various sources, transforming and preparing data for analytical purpose; generated actionable insights using extracted and transformed data.
- Utilized Cron jobs to automate data file tracking processes; gained extensive experience in MySQL, Oracle, Python & Git.

#### **Junior Web Developer [Co-op]**

04/2017 to 08/2017

**SimplyCast** – Dartmouth, NS, Canada

- Employed proficiency in Technical Stack including JavaScript, PHP, HTML, CSS, Git and Agile.
- Led and took ownership of all coding, testing and collaboration initiatives; gained knowledge of agile methodologies within software development processes.
- Effectively tested software to ensure functionality and adherence to plan objectives, as well as management expectations.
- Contributed to team solutions to complete stories and meet goals, exceeding client expectations and providing exceptional service.

## **Skills**

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- **Software Proficiencies** | Tensorflow, AWS Cloud, Kafka, Redis, Docker & Kubernetes, RESTful API, Git, Vim, MySQL, MongoDB, Django, Kubernetes, Netflix Zuul, React & Redux, IBM DB2
- **Programming Languages** | Java, C++, Python, JavaScript
- **Analysis Skills** | Web Analytics, Software Testing, Software Validation, Data Storage & Data Retrieval
- **Qualitative Skills** | Communication, Leadership & Cross-Cultural Awareness

## **Certifications**

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**Machine Learning with Python Certificate** - IBM, 2021

**AWS Machine Learning Specialty Certificate** - Amazon Web Services, 2021

**AWS Certified Cloud Practitioner Certificate** - Amazon Web Services, 2020

**SAFe® 5.1 Scrum Master Certification (SSM)** - Knowledge Hut, 2020

**Applied Data Science with Python Level 2 Certificate** - IBM, 2020

**Data Science Foundations Level 2 Certificate** - IBM, 2020

**Big Data Foundations Level 1 Certificate** - IBM, 2020

**IBM Garage Methodology Explorer Certificate** - IBM, 2020

## **Extracurricular Involvements**

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**Business Analyst - Work Placement Education Program Experience with Amazon**, 2021

**Coach - Halifax Innovation Challenge**, 2021

**Teaching Assistant - Java Programming Language**, 2019

**Completed Sandbox Discovery Program in Dalhousie ShiftKey Labs**, 2018

**Participated Game Jam Hackathon in Dalhousie**, 2017