

EDUCATION

University of Waterloo, Bachelor of Computer Science | Major GPA: **90%**

Apr 2022

- **Selected Coursework:** Reinforcement Learning, Computational Neuroscience, Machine Learning, Algorithms, OS, Security, Networks, Applied Cryptography, Cognitive Neuroscience

EXPERIENCE

Google DeepMind | *Software Engineer*

London | Feb – Jun 2021

- Working on client-side neural networks on the AI Components team

Mila – AI Institute | *Research Assistant, COVID-19*

Montreal | Jun 2020 – Pres.

- Building an epidemiologically accurate **COVID-19 spread simulator** using SimPy to evaluate contact tracing methods
- Co-authored COVI-AgentSim: an ABM for Evaluating Methods of Digital Contact Tracing with Turing laureate **Yoshua Bengio**

Amazon Web Services | *Software Engineer, EC2 Auto Scaling*

Vancouver | May – Aug 2020

- Enabled cost-savings of **90%** by developing & deploying a capacity-aware, instance-flexible allocation strategy called Flexible-Single-Instance-Type (Flexible SIT)
- Optimized Flexible SIT **reliability & scalability** by analyzing capacity across availability zones before provisioning instances
- Reduced underscaled Auto Scaling Group frequency by extending **Attach-Instances & Exit-Standby** API functionality

Intuit | *Software Engineer, Security R&D*

Mountain View | May – Aug 2019

- Saved **\$3 mil./year** by designing & deploying end-to-end NLP pipeline that detected **70,000+** brand impersonation violations
- Reduced client-side **TP99** latency by **81%** using batch processing instead of multi-threaded parallel processing to enable **real-time** fraud detection and prevention

University of Waterloo | *Research Assistant*

Waterloo | Jan – Apr 2019

- Studied the **Protégé Effect** with **artificial conversational agents** under Prof. Edith Law
- Contributed to the Curiosity Notebook, which was used in work accepted to SIGCHI EA 2020

Intuit | *Software Engineer, TurboTax*

Toronto | May – Aug 2018

- Improved TurboTax's peak logging efficiency by **1800%** using Log4J2 Lock-free Asynchronous Loggers
- Designed and developed **open source** fan curation platform for Comic Con Museum in Intuit hackathon

PROJECTS

Curiosity Driven Exploration

Apr 2020

- Investigated effects of **curiosity-based & entropy-based exploration** in RL agents using **PyTorch & OpenAI Gym**
- Confirmed exploration in reinforcement learning agents significantly decreases training time (**>3x**) in **sparse-reward environments**

Lacs for Scala

Dec 2019

- Compiled a subset of Scala into MIPS Assembly using a **CYK Parser** with **context-sensitive analysis**
- Implemented closures, nested functions, type checking, & automated garbage collection using Cheney's algorithm

Brock University | *Bioinformatics*

Aug 2016 – Jun 2017

- Investigated role of proctolin (neuropeptide) in fruit flies using genetic engineering and computer vision
- **National Bronze Medalist** at Canada Wide Science Fair 2017 (**Top 70** of 500,000+)

SKILLS

Languages: Java, Python, C++, Scala, C, JavaScript, Ruby, SQL, \LaTeX , Scheme, HTML, CSS

Technologies: AWS, Docker, PyTorch, TensorFlow, GCP, Kubernetes, Git, Spring Framework