AKSHAY PATEL

paksha.cs@gmail.com
paksha.github.io

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 | *Research Engineer, AI Components* *London | Feb – Jun 2021*
- Working on machine learning compilers to enable client-side neural networks

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