AKSHAY PATEL

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paksha.github.io

EDUCATION

University of Waterloo, Bachelor of Computer Science | Major GPA: **90%** *Apr 2022*

EXPERIENCE

Google DeepMind | *Research Engineer, AI Components* *Feb – Jun 2021*

- Working on machine learning compilers to enable client-side neural networks

Mila – AI Institute | *Research Assistant, COVID-19* *Jun 2020 – Pres.*

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

Amazon Web Services | *Software Engineer, EC2 Auto Scaling* *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** 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* *May – Aug 2019*

- Saved **$3 mil./year** by designing & deploying end-to-end NLP pipeline that detected **70,000+** brand impersonations
- 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* *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* *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 RL 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

SKILLS

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

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