

# NEEV PARIKH

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## EXPERIENCE

### Research Engineering Intern

Common Sense Machines

📅 May 2021 – August 2021

📍 Boston, MA

- Implemented large-scale, auto-regressive Seq2Seq models for working with 3D geometry from images.
- Worked with **Deepspeed** to explore scaling options for 500M+ param models to feasibly scale existing sequence-based models.
- Implemented a Blender-based Gym environment for RL to optimize textures on a 3D model.
- Implemented a graphics algorithm to find surface patches in a 3D wireframe (Zhang et. al., 2013)
- Dockerized AWS pipeline to create cloud-independent dev/production environment.

### Research Assistant

Intelligent Robot Lab

📅 Jun 2020 – Present

📍 Providence, RI

- Working on Reinforcement Learning/Robotics research, advised by **Prof. George Konidaris**
- New mathematical framework (LOMDPs) for robot domains
- Unsupervised representation learning for improving RL
- Graph-based priors for improving multi-task and RL performance

### Machine Learning Intern

Myelin Foundry

📅 Jun 2019 – Aug 2019

📍 Bangalore, India

- Developed a cutting-edge, deep-learning based pipeline in Pytorch and Tensorflow to augment VFX workflows for a POC product.
- Researched and managed a company-wide, cloud-compute platform, reducing potential monthly costs by 70%.
- Helped transition MLOps to Microsoft Azure.
- Implemented DeepLabv3+ from **ECCV 2018** to develop SOTA pipelines for semantic segmentation tasks.
- Achieved 90% in business-aligned metrics with reasonable inference time.

## PUBLICATIONS

\*equal contribution

- N. Parikh\*, Z. Horvitz\*, N. Srinivasan\*, A. Shah, and G. Konidaris (Oct. 2020). "Graph Embedding Priors for Multi-task Deep Reinforcement Learning". In: *NeurIPS 2020. KR2ML Workshop*.
- C. Allen, N. Parikh, and G. Konidaris (Oct. 2020). "Learning Markov State Abstractions for Deep Reinforcement Learning". In: *NeurIPS 2020. Workshop on Deep Reinforcement Learning*.
- K. Asadi, N. Parikh, R. Parr, G. Konidaris, and M. Littman (Sept. 2020). "Deep Radial-Basis Value Functions for Continuous Control". In: *35th AAAI Conference on Artificial Intelligence 2021*.
- M. Merlin, N. Parikh, E. Rosen, and G. Konidaris (May 2020). "Locally Observable Markov Decision Process". In: *International Conference on Robotics and Automation. Workshop on Perception, Action, Learning*.

## EDUCATION

M.Sc. in Computer Science

**Brown University**

📅 Aug 2018 – May 2022 (Concurrent)

🎓 GPA: 4.0

Advised by: **Prof. George Konidaris**

B.Sc. in Computer Science

**Brown University**

📅 Aug 2018 – May 2022 (Concurrent)

🎓 GPA: 3.9

Advised by: **Prof. Michael Littman**

### Graduate Courses

ML with Limited Labeled Data   Robotics  
Machine Language Processing  
Reintegrating AI   Prescriptive Analytics  
ML Theory Seminar   Intro to RL (IS)

### Undergraduate Courses

Distributed Systems   Computer Vision  
Accelerated Intro CS   Intro to Systems  
Linear Algebra   Convex Optimization  
Probability & Statistics   Microeconomics  
Honors Multivariable Calc.   Algorithms

## PROJECTS

### Onager

Lightweight hyperparameter tuning and experiment management, with interfaces to Slurm and Gridengine clusters

🐙 camall3n/onager

### Hierarchical Doom

High-throughput, distributed RL project to implement async. PPO-OC (Proximal Policy Optimized - Option Critic) on the VizDoom environment

🐙 neevparikh/hierarchical-doom

## SKILLS

Python   Golang   C   Tensorflow  
Pytorch   Numpy   Machine Learning  
Slurm   Gridengine   AWS   Azure  
Google Cloud   Docker   Git   Haskell