Vashisht Madhavan

Machine Learning and Artificial Intelligence

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University of California, Berkeley *Berkeley, CA : Aug'16 - May'17*

M.S. Electrical Engineering and Computer Science *GPA : 3.82 / 4*

Computer Vision and Machine Learning - Advisor: Trevor Darrell

University of California, Berkeley *Berkeley, CA : Aug'12 - May'16*

B.E. Electrical Engineering and Computer Science

Experience

Uber Technologies Inc. Research Scientist II *June 2017 - Current*

- Working on deep reinforcement learning research with a focus on exploration, generalization, and fast adaptation.
- Leveraging architecture search techniques to improve performance & reduce latency in perception models for autonomous vehicles.
- Facilitating the application of reinforcement learning to various Uber business units.
- Leading a reading group to discuss the latest research in reinforcement learning with the broader Uber data science community.

Berkeley Artificial Intelligence Research Lab Graduate Student Researcher *May 2016 - May 2017*

- Worked with Berkeley Deep Drive on scene understanding and perception algorithms for autonomous vehicles.
- Focused on unsupervised and semi-supervised transfer learning from virtual urban environments.

SafelyYou Computer Vision Engineer *Jan 2017 - May 2017*

- Worked on improving patient care in assisted living facilities via real-time tracking and event detection.
- Implemented active learning pipelines for quicker labeling and deployment of object detection models.

University of California, Berkeley Teaching Assistant: Intro to Machine Learning *Jan 2016 - May 2016*

- Oversaw course logistics, ran discussion sections, and contributed to writing homeworks and exams.

Microsoft Corporation Software Engineering Intern *May 2015 - Aug 2015*

- Investigated machine learning models for time prediction within the Windows testing framework.
- Created pipelines for data ingestion, iterative model updates, and subsequent Azure deployment.

Research

An Atari Model Zoo for Analyzing, Visualizing, and Comparing Deep RL Agents

- Felipe Petroski Such, Vashisht Madhavan, ... , Joel Lehman
- IJCAI 2019

BDD100K: A Diverse Driving Video Database with Scalable Annotation Tooling

- Fisher Yu, Wenqi Xian, Yingying Chen, Fangchen Liu, Mike Liao, Vashisht Madhavan, Trevor Darrell
- CVPR 2019 Workshop on Autonomous Driving

Improving Exploration in Evolution Strategies for Deep Reinforcement Learning via a Population of Novelty-Seeking Agents

- Edoardo Conti*, Vashisht Madhavan*, Felipe Petroski Such, Joel Lehman, Kenneth O. Stanley, Jeff Clune
- * - equal contribution
- NeurIPS 2018

Deep Neuroevolution: Genetic Algorithms are a Competitive Alternative for Training Deep Neural Networks for Reinforcement Learning

- Felipe Petroski Such, Vashisht Madhavan, Edoardo Conti, Joel Lehman, Kenneth O. Stanley, Jeff Clune
- NeurIPS 2018 Deep RL Workshop

Best Practices for Fine-Tuning Visual Classifiers to New Domains

- Brian Chu*, Vashisht Madhavan*, Oscar Beijbom, Judy Hoffman, Trevor Darrell
- ECCV 2016 TaskCV Workshop

Skills

Languages

- Python, R, Java, C/C++, Javascript

Machine Learning

- TensorFlow, PyTorch, Caffe, Spark, Scikit-Learn, OpenCV

Achievements

- 2016 Outstanding Student Instructor Award - Introduction to Machine Learning
- NIPS 2017 Reviewer: Machine Learning for Intelligent Transportation Systems
- Patent 2018: Scalable Parameter Encoding of Artifical Neural Networks Obtained via an Evolutionary Process
- Patent 2018: Training Neural Networks Using Evolution Based Strategies and Novelty Search
- Invited Talk 2019: US Patent and Trademark Office - Deep Neuroevolution
- ICML 2019 Reviewer: Exploration in RL Workshop