Ossama Ahmed

❖ http://ossamaahmed.github.io/ ❖ www.github.com/ossamaAhmed ❖ ossama.ahmed@mila.quebec

Education

ETH Zürich Sep. 2018 - Sept. 2020
MSc. Robotics, Systems & Control *Zürich, Switzerland*

McGill University Sep. 2013 - Dec. 2016
BEng. Software Engineering. *Montreal, QC*
Awards: - Meyer Undergraduate Award - Gruber SURE Award

Industry Experience

DeepLite.ai June. 2018 - Sep. 2018
Research Engineer - Contractor *Montreal, QC*
- Engineered a neural network optimizer that improves speed, size and efficiency for on-device inference.
- Effectively used reinforcement learning to compress DNNs in order to satisfy computational constraints.

Qualcomm June. 2017 - June. 2018
Machine Learning Software Engineer *Toronto, ON*
- Implemented neural network compression techniques for efficient inference across Snapdragon mobile platforms, to run faster on **CPU**, **GPU** or **DSP**.

Research Experience

Montreal Institute for Learning Algorithms (MILA) Oct. 2020 - Present
Visiting student Researcher *Montreal, QC*
- Research on generalization in reinforcement learning (RL) for planning, under the supervision of Prof. Yoshua Bengio.

Max Planck Institute for Intelligent Systems Feb. 2020 - Sept. 2020
Visiting student Researcher *Tubingen, Germany*
- Successfully implemented and released CausalWorld, a novel robotics manipulation benchmark for generalization in RL, under the supervision of Prof. Bernhard Schölkopf.
- Currently co-organizing Real Robot Challenge to advance the state-of-the-art in dexterous robotic manipulation.

Learning and Adaptive Systems Lab, ETH Zurich Oct. 2019 - Feb. 2020
Master's student Researcher *Zurich, Switzerland*
- Effectively implemented and benchmarked a model predictive controller (MPC) that uses a bayesian neural network to plan under uncertainty, under the supervision of Prof. Andreas Krause.
- Implemented and released blackbox_mpc for using MPC with various sampling-based optimizers.

Robotic Systems Lab, ETH Zurich Feb. 2019 - July. 2019
Master's student Researcher *Zurich, Switzerland*
- Implemented and benchmarked a legged locomotion controller that uses behavioral cloning and policy gradient methods for the quadrupedal robot ANYmal, under the supervision of Prof. Marco Hutter.

Reliable Silicon Systems Lab, McGill University May. 2016 - May. 2017
Research Assistant *Montreal, QC*
- Leveraged machine learning by training a neural network to predict the performance of future candidate neural networks, under the supervision of Prof. Brett Meyer.

Publications – (http://ossamaahmed.github.io#publications)

- **Ossama S. Ahmed**, Frederik Träuble, Anirudh Goyal, Alexander Neitz, Manuel Wütrich, Yoshua Bengio, Bernhard Shölkopf and Stefan Bauer, "CausalWorld: A Robotic Manipulation Benchmark for Causal Structure and Transfer Learning", under review at ICLR 2021.
- S. C. Smithson, **Ossama S. Ahmed**, G. Yang, W. J. Gross, and B. H. Meyer, "Neural Networks Designing Neural Networks", Hardware and Algorithms for Learning On-a-chip (HALO) 2016, Workshop on, Nov 2016 – Poster.

Skills

- **Languages and Frameworks:** Python, Java, C++, C, VHDL Tensorflow, Pytorch, ROS, Java Script, OCaml and Matlab.
- **Relevant Coursework:** Advanced Machine Learning, Deep Learning, Vision for Robotics, Linear Systems Theory, Model Predictive Control, Causality, Machine Perception, Bayesian Statistics, System Identification, Autonomous Mobile Robots.

Notable Projects – (full list at http://ossamaahmed.github.io#projects)

- Deep 3D Human Pose Estimation
- Online Adaptation using Graph Neural Networks in Model-Based RL
- Local Exploration Based on Truncated Signed Distance Field Map using RL
- Sparse Monocular Visual Odometry Pipeline