Joshua Zhanson

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Education

Carnegie Mellon University School of Computer Science   *Pittsburgh, PA*
B.S. Computer Science, minor in Machine Learning   *Aug 2016 - May 2020*
QPA: 4.00   Dean's List: Fall 2016 - Spring 2019

16-831 Statistical Techniques in Robotics ⌣ 11-731 Machine Translation & Sequence-to-Sequence Models
15-418 Parallel Computer Architecture & Programming ⌣ 15-458 Discrete Differential Geometry
15-462 Computer Graphics ⌣ 15-312 Programming Languages ⌣ 10-703 Deep Reinforcement Learning

Research + Projects

Proprioceptive Spatial Representations for Generalized Locomotion   *June 2018 - July 2019*
Joshua Zhanson, Emilio Parisotto, Ruslan Salakhutdinov

Developed JSONWalker environment for robot locomotion and GUI editor to easily construct robot bodies in box2d physics simulator. Wrote scripts in **Python** to randomize robot bodies, build datasets, and evaluate policies on those datasets. Trained **PyTorch** convolutional models and co-authored paper. Accepted to **Workshop on Structure & Priors in Reinforcement Learning** at **ICLR 2019**.

Slither-703   *Mar 2018 - May 2018*

Implemented Snake game in **Python** as single-agent and multi-agent OpenAI Gym environments and successfully trained DDQN and A2C on both single and multi-agent environments with **Tensorflow**
Patched memory leak on (now abandoned) OpenAI Universe and trained A2C in **Tensorflow** on the online multiplayer slither.io game against real players

Teaching

10-703 Deep Reinforcement Learning and Control TA   *Fall 2019*

15-300 Research and Innovation in Computer Science TA   *Fall 2019*

15-213 Introduction to Computer Systems TA   *Summer 2019*
Developed active learning lecture activities on system-level I/O and network protocols. Participated in development for activities on bit-level representations, machine programming, and exceptional control flow (processes and signals). Scaled and benchmarked memory access traces to evaluate student dynamic memory allocator submissions.

Employment

Merit International, Inc. (formerly Sigma Accolade, Inc.)   *Millbrae, CA*
Software Engineer Intern   *May 2018 - Aug 2018*

Implemented a feature that allows Orgs to disallow duplicate Merits issued to the same user by adding **React** components in **JavaScript** linked to the **Scala** backend with as-you-type **GraphQL** mutations and queries, using **Cats** type abstractions for error handling and threading errors to the frontend UI

Skills

Languages: Python ⌣ C/C++ ⌣ Javascript ⌣ Scala ⌣ Standard ML ⌣ Java ⌣ Bash
Technologies: Pytorch ⌣ Tensorflow/Keras ⌣ Numpy/Pandas ⌣ Docker ⌣ Git ⌣ React ⌣ Typelevel.Cats