Jacob Manning

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EDUCATION

University of Pittsburgh, Pittsburgh, PA — *BSE, Computer Engineering*

EXPECTED GRADUATION: MAY 2019

GPA: 3.86/4.00

Relevant coursework: Algorithms, Data Structures, Computer Vision, High Performance Computing, Parallel Computer Architecture, Systems Software

EXPERIENCE

Argo AI, Pittsburgh, PA — *Software Engineer Intern*

MAY 2018 - AUGUST 2018

Perception Infrastructure team for level 4 self-driving car development

Work protected under non-disclosure agreement

NASA Goddard Space Flight Center, Greenbelt, MD — *Artificial Intelligence and Machine Learning Intern*

JUNE 2017 - AUGUST 2017

Trained a deep neural network using industry-standard tools such as TensorFlow, Keras, and SciPy for detecting wildfires onboard a satellite

Created custom neural network framework in C to efficiently perform inference for neural networks on embedded platforms

Benchmarked inference performance of neural networks on the Xilinx Zynq-7000 and the Raspberry Pi 3 Model B

NSF Center for Space, High-performance, Resilient Computing, Pittsburgh, PA — *Undergraduate Researcher*

SEPTEMBER 2017 - AUGUST 2018

Lead task of deploying machine learning on embedded ARM space platforms

Published "Machine Learning Space Applications on SmallSat Platforms with TensorFlow" conference paper

PUBLICATIONS

Machine Learning Space Applications on SmallSat Platforms with TensorFlow — *Manning et al. 2018; AIAA/USU Conference on Small Satellites*

Demonstrated use of Convolutional Neural Networks on space-grade computer for classifying images taken by STP-H5/CSP flight computer on International Space Station

Featured on Google's TensorFlow blog (2019)

PROGRAMMING SKILLS

Languages: C++, Python, Java, C, Bash, Ruby, MATLAB

Tools: Git, Docker, TensorFlow, OpenMP, MPI, Keras, SciPy, NumPy, CUDA, Pandas, Vim, CMake, Make

INDEPENDENT STUDY

Andrew Ng's "Introduction to Machine Learning"

Michael Nielsen's "Neural Networks and Deep Learning"

Google's "Deep Learning" udacity course

Andrew Ng's deeplearning.ai specialization classes

Sebastian Thrun's "Artificial Intelligence for Robotics" udacity course

Stanford University CS231n "Convolutional Neural Networks for Visual Recognition"

RECOGNITION & LEADERSHIP

Eagle Scout Boy Scouts of America, 2012

University of Pittsburgh Emerging Leaders Program ten-week program to develop leadership acumen, 2015

Resident Assistant, University of Pittsburgh Office of Residence Life, 2016 - present

Resident Assistant of the Month excellent performance in September, 2016

Membership Chair, American Institute of Aeronautics and Astronautics University of Pittsburgh, 2016 - 2018