

# Hariank Muthakana

hariank@cmu.edu | hariank.me | github.com/hariank | linkedin.com/in/hariank

## EDUCATION

### Carnegie Mellon University

#### MS in Computer Science

Expected Dec 2019 | Pittsburgh, PA

Cum. QPA 3.9/4.0

#### BS in Computer Science

#### Minor in Machine Learning

Dec 2018 | Pittsburgh, PA

Cum. QPA 3.5/4.0

### Thomas Jefferson High School for Science and Technology (TJHSST)

Grad. June 2015 | Alexandria, VA

## COURSEWORK

### MACHINE LEARNING

- 16-824 Visual Learning/Recognition
- 10-703 Deep Reinforcement Learning
- 10-707 Deep Learning
- 10-701 Machine Learning (Phd)
- 36-226 Statistical Inference
- 36-401 Modern Regression
- 36-217 Probability Theory
- 21-241 Matrix Algebra

### COMPUTER SCIENCE

- 15-750 Graduate Algorithms
- 15-451 Algorithm Design/Analysis
- 15-210 Parallel Data Structures
- 15-418 Parallel Architecture
- 15-213 Computer Systems
- 15-251 Great Theoretical Ideas in CS
- 15-455 Complexity Theory
- 80-310 Formal Logic

## SKILLS

C/C++ • Python • Java

Tensorflow • Keras • PyTorch

R • Octave/MATLAB • SQL

ROS • Git • Unix/Linux

Deep Learning • Computer Vision

## EXPERIENCE

### Uber Advanced Technologies Group

Software Eng Intern | Summer 2018 | San Francisco, CA

- Developed autonomous driving models to predict highway actor behavior
- Built robust, model-agnostic experimentation pipelines for rapid iteration
- Made high-level design choices for a fledgling codebase as part of a small trucking-focused team

### Uber Advanced Technologies Group

Software Eng Intern | Summer 2017 | Pittsburgh, PA

- Used machine learning algorithms to automate large 2D image dataset annotation for autonomous driving
- Trained and deployed deep vision models to augment human labeling efforts
- Reduced labeling man-hours by 1000x factor and improved accuracy

### Google

Software Eng Intern | Summer 2016 | Mountain View, CA

- Worked on smart window management features in Chrome OS
- Contributed to the ARC project - bringing Android apps to Chromebooks

### Carnegie Mellon University

Research Assistant | Fall 2016 - Present | Pittsburgh, PA

- Human vision systems and bio-inspired models, advised by Dr. Mike Tarr
- Active learning and learning theory, advised by Dr. Aarti Singh
- Deep learning for computational biology, advised by Dr. Min Xu

## PUBLICATIONS

- Yichong Xu, **Hariank Muthakana**, Sivaraman Balakrishnan, Aarti Singh, Artur Dubrawski: Nonparametric Regression with Comparisons: Escaping the Curse of Dimensionality with Ordinal Information  
35th International Conference on Machine Learning (ICML 2018)
- Min Xu, Xiaoqi Chai, **Hariank Muthakana**, Xiaodan Liang, Ge Yang, Tzviya Zeev-Ben-Mordehai, Eric P. Xing: Deep learning-based subdivision approach for large scale macromolecules structure recovery from electron cryo tomograms  
25th Intelligent Systems for Molecular Biology Conference (ISMB 2017)

## PROJECTS

2019	3D CNNs for Unsupervised Video Representations	16-824 Project
2018	Improving Single-GPU Performance for DQNs	15-418 Project
2018	Deep RL Exploration with CVAEs	10-703 Project
2017	Feature Flow for Frame Interpolation	10-707 Project