Yuan Liu

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Education

- **Carnegie Mellon University** — Pittsburgh, PA
  Master of Science in Electrical and Computer Engineering; GPA: 3.89 — *Jan. 2017 – Present*
- **Huazhong University of Science and Technology** — Wuhan, China
  Bachelor of Science in Opto-information Science and Technology; GPA: 3.90 — *Sep. 2012 – June. 2016*

Experience

- **Carnegie Mellon University** — Pittsburgh, PA
  MS Research Intern @ CyLab — *Sep 2017 - Present*
- **Carnegie Mellon University** — Pittsburgh, PA
  Grad Research Assistant @ ECE — *May 2017 - Aug 2017*

Projects

- **Optimization of Deep Learning Inference Engine on Autopilot Devices** — *Sep. 2017 - Present*
  - Re-implemented tensorNet to accept custom models
  - Currently under active development
- **C0 Compiler** — *Sep. 2017 - Present*
  - Implemented using Swift with C-bridged lexer and yacc parser generators
  - Currently supports a straight-line and loop-only subset of C
- **yNN: a Lightweight Neural Network Framework** — *Sep. 2017 - Present*
  - Easy to build a fully-fledged neural network for quick model verification
  - Built from scratch and open-source after the end of 2017 Fall semester
- **Automated Optimization of Linear Algebra Kernels** — *May. 2017 - Aug. 2017*
  - Implemented code generator which generates optimized code whose performance is as good as expert-tuned kernels
  - Generalized the kernel to algebraic path problem
- **Footprint One-shot Recognition based on Convolutional Neural Networks** — *Apr. 2017 - May. 2017*
  - Implemented an AlexNet-like network to handle augmented images
  - Developed multiple augmentation methods to overcome limited training set
  - Achieved state-of-the-art accuracy in test set
- **CUDA accelerated PCA** — *Apr. 2017 - May. 2017*
  - Achieved 200x speedup compared to baseline
- **Linux Shell** — *Mar. 2017*
  - Supported multiple child processes and background/foreground switching
  - Eliminated race conditions between processes
- **3D reconstructions of Light Field Images** — *Jun. 2016 - Dec. 2016*
  - Implemented a software which takes image captured by light field camera into depth adjustable images
  - Calibrated driver parameters of Lytro light field camera

Skills

- **Machine Learning**: TensorFlow, Caffe, MATLAB
- **High Performance Computing**: Intel AVX, CUDA, TensorRT, OpenMP
- **Programming Languages**: C, C++, Python, Swift, Haskell, x86-64 asm