Longqi (Rocky) Cai

https://misaka-10032.github.io

412-652-8030
longqicai@gmail.com
515 South Aiken Avenue, Pittsburgh, PA

Education

- **Carnegie Mellon University** — Pittsburgh, PA
  M.Sc. in Information Technology Strategy (3.87/4.00) — *Sep. 2015 - Dec. 2016*
- **Fudan University** — Shanghai, China
  B.Sc. in Computer Science and Technology (3.64/4.00) — *Sep. 2011 - Jul. 2015*

Experience

- **Carnegie Mellon University** — Pittsburgh, PA
  Teaching Assistant — *Sep. - Dec. 2016*
  - Assisted Prof. William W. Cohen in the course *Machine Learning with Large Datasets*.
  - Improved the assignment *Approximate PageRank* by visualization on a cleaner dataset.
  - Designed the assignment *Phrase Finding on Spark*, helping students visualize the phrase cloud.
- **Glow, Inc** — Shanghai, China
  Software Engineer Intern — *Jul. 2014 - Jul. 2015*
  - Glow is a startup caring about women's health, founded by Max Levchin.
  - Familiar with Android SDK and client-server model.
  - Customized UI widgets and animation for better user experience.
  - Set up internal Maven center with Archiva and Gradle, and extracted common libraries, improving work efficiency of multiple teams.
  - Integrated Google Now API, including both server and client side OAuth2 flow.

Projects

- **Powerline Detection on Aerial Images** — Carnegie Mellon University
  Independent Study supervised by Prof. Kayvon Fatahalian — *Jun. - Aug. 2016*
  - Adapted Fully Convolutional Network to the task of line detection.
  - Implemented a fast Hough Transform Layer, improving convergence rate by 10 times.
  - Built a web visualization tool, helping diagnose and evaluate results.
- **Halstm** — Carnegie Mellon University
  Class project for Parallel Computer and Architecture Programming — *Apr. - May. 2016*
  - Implemented Long-Short Term Memory (LSTM) with Halide.
  - Exploited multi-thread execution and SIMD.
  - Improved CPU performance by 2x speedup, compared with Caffe.
- **OCR with CRNN** — Carnegie Mellon University
  Class project for Probabilistic Graphical Model — *Mar. - Apr. 2016*
  - Solved the Optical Character Recognition (OCR) problem with CNN+RNN+CTC.
  - Compared three recursive layers: LSTM, Attention, and Grid LSTM.
  - Achieved 86.5% accuracy with Grid LSTM on ICDAR13, better than the best in 2015.
- **Distributed Caffe with MPI** — Carnegie Mellon University
  Class project for Machine Learning — *Oct. - Dec. 2015*
  - Refactored Caffe to support Message Passing Interface (MPI) in Inner Product Layer.
  - Studied the tradeoff between throughput and synchronization cost.

Skills

- Language: Python $\geq$ Java $\approx$ C++ $>$ C.
- Tools: Git, Bash, Makefile, Gradle, Vagrant, Docker, Hadoop, Spark, Markdown, Latex.