

# Longqi (Rocky) Cai

<https://misaka-10032.github.io>

412-652-8030

[longqicai@gmail.com](mailto: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

---

- **Glow, Inc** Shanghai, China  
*Software Engineer Intern* Jul. 2014 - Jul. 2015
  - Glow is a startup caring about women's health, founded by Max Levchin.
  - 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 Computing* Apr. - May. 2016
  - Implemented Long-Short Term Memory (LSTM) with Halide.
  - Exploited multi-thread execution and vector ALUs.
  - 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.
- **Caffe 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 impact in throughput and synchronization cost.
- **Pose Detection with CNN** Fudan University  
*Senior thesis* Apr. - Jun. 2015
  - Trained CNN model to detect if a student is paying attention or not.
  - Experimentally applied campus-wide as part of lecture evaluation.

## SKILLS

---

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