

# Longqi (Rocky) Cai

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

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## EXPERIENCE

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- **Google Research** Mountain View, CA  
*Software Engineer* Mar. 2018 - present
  - Image segmentation infrastructure and models.
    - \* Set up the data pipelines to push questions and pull answers from the crowd workers.
    - \* Refactored the image segmentation API for smoother model training and exporting.
    - \* Customized the segmentation models for various products: Shopping, Photos, Web Design.
  - Accurate sky segmentation in Google Camera.
    - \* Collected 120k high-accuracy sky masks with active learning and density estimation.
    - \* Published a paper and a patent on the technique.
    - \* Designed an initialization mechanism to hide the 1s latency during the mode switch.
  - Labeled product retrieval system in Google Lens.
    - \* Fused the visual embeddings and the OCR tokens in the multi-round ranking.
    - \* Improved the user satisfaction by 2.3 (out of 5) compared with the SIFT-based system.
- **Google Photos** Mountain View, CA  
*Software Engineer* Mar. 2017 - Mar. 2018
  - Built the data pipelines for the on-device face clustering.
  - Implemented the batched processing and the recovery mechanism.
  - Implemented the global consistency mechanism.
- **Glow, Inc** Shanghai, China  
*Software Engineer Intern* Jul. 2014 - Jul. 2015
  - Customized the UI widgets and the animations for better user experience.
  - Implemented the OAuth2 flow for the Google Now Integration.
  - Set up the internal Maven center, and extracted the common libraries for the team efficiency.

## EDUCATION

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- **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

## PROJECTS

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- **Partical Systems** Carnegie Mellon University  
*Class project for Compute Graphics* Dec. 2016
  - Designed the abstraction of a particle system in Javascript.
  - Implemented two simulation examples based on this abstraction: fireworks and cloth.
- **Halstm** Carnegie Mellon University  
*Class project for Parallel Computer and Architecture Programming* Apr. - May. 2016
  - Implemented LSTM with Halide.
  - Exploited the multi-thread execution and SIMD, and achieved 2x speedup.

## SKILLS

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- Languages: C++, Python, Java.
- Tools: Bash, Git, Mercurial, Bazel, Makefile, Markdown, Latex.