

# Ligeng Zhu

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## Education

- 2015 – now **Simon Fraser University**, *Vancouver*, BC, Canada.  
B.Sc in Computing Science, Dual Degree Program exchange. GPA: 3.71/4.0
- 2013 – now **Zhejiang University**, *Hangzhou*, Zhejiang, China.  
B.Eng in Computer Science & Technology. GPA: 3.8/4.0

## Publications

- In submission **Sparsely Connected Convolutional Networks.**  
[Ligeng Zhu](#), [Ruizhi Deng](#) and [Ping Tan](#)  
(Hope to appear in CVPR 2018)  
A new sparsely connected network architecture leads to better performance-parameter efficiency.
- January 2018 **Colorize Color Images.**  
[Ligeng Zhu](#) and [Brian Funt](#)  
To appear in 30th Human Vision and Electronic Imaging Conference (HVEIC 2018).  
A technique to improve color quality by colorizing it.
- October 2016 **Attribute Recognition from Adaptive Parts.**  
[Luwei Yang](#), [Ligeng Zhu](#), [Yichen Wei](#), Shuang Liang and [Ping Tan](#)  
In 27th British Machine Vision Conference (BMVC 2016)  
An end-to-end deep learning approach to optimize parts detection for attribute recognition.

## Experience

- May 2017 – **Research Assistant**, *CVL Lab*, Simon Fraser University, Advisor: Prof.[Brian Funt](#).  
Research in deep learning and color vision
- One publication on conference HVEI 2018
  - Contribution to Gehler's Dataset
- May 2017 – **Deep Learning Engineer**, *Deep Perception Group*, TuSimple, Mentor: Dr.[Panqu Wang](#).  
Sept 2017 Summer internship
- Designed an algorithm that generates the road area from lidar cloud point. (Copyright)
  - Designed vehicle back light understanding system. (Copyright)
  - Improved scene parsing
- [TuSimple Inc.](#) is an unicorn startup aiming to achieve the first commercially viable autonomous truck driving platform with L4 (SAE) levels of safety.
- Sept 2015– **Research Assistant**, *GruVi Lab*, Simon Fraser University, Advisor: Prof.[Ping Tan](#).  
May 2017 Research in computer vision and 3d reconstruction
- One publication on conference BMVC 2016
  - Contribution to garment dataset
- Sept 2014 – **Research Assistant**, *CAD & CG Lab*, Zhejiang University.  
Jan 2015 Worked in computer graphics
- Implemented a image depth-detect algorithm
  - Participated a material simulation system.

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## Talks and Teaching

- Oct 2017 **Deep Learning for Computer Visioners**, Simon Fraser University, [Slides](#).  
Invited lectures for undergraduate course Computer Vision CMPT 412.
- May 2017 **Neural Style Transformations**, TuSimple, [Slides](#).  
Regular Group tech share during internship.
- Jan 2017 **Deep Learning Live for Beginners**, Zhejiang University, [Slides](#).  
A general introduction for beginners who have background of programming and math basics but never touched deep learning before.

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## Honors and Awards

- 2017 **Open Source Scholarship**, Simon Fraser University.  
To reward students who made a major contribution in a open source projects.
- 2017 **Academic Scholarship**, Issued by Simon Fraser University.  
Offered to students who show good academic behaviors.
- 2015 **ACM-ICPC Contest**, Issued by Zhejiang University.  
Second prize
- 2015 **The Mathematical Contest In Modeling**, Issued by Zhejiang University.  
First prize, ranking 3/143
- 2015 **The Mathematical Contest In Modeling**, COMAP.  
Honorable Mention

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## Language Proficiency

- Chinese Native
- English Fluent, IELTS 7.0/9.0, GRE V: 154/170, Q: 170/170, W: 3.5/6
- Japanese Understand, JTEST N2

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## Projects

- 2017 **MXBox: a toolbox for mxnet framework**, [GitHub](#).
  - Define preprocess as transformation flow.
  - Efficient and flexible DataLoader.
  - Rich state-of-the-art models and their pretrained weights.
- 2016 **Colorize gray-scale image using deep neural networks**, [Released model](#).
  - Implemented the state of the art model, and accelerated training time from 3 weeks to 3 days.
  - Introduced a simple feed-forward network for colorization task, which needs much less training time while keeping competitive results to the state-of-the-art model.
- 2016 **Fast Artistic Stylization for Videos**, [Online Demo](#).  
Proposed an stable (no flash between frames) and fast (30x faster than Ruder's method) artistic style transfer approach for videos.
- 2016 **Play with Multimedia**.
  - Implemented RAW-to-JPEG converter with standard JPEG 2000.
  - Implemented a simple video-gif converter based on GIF89 standardization.
  - Built a image retrieval system with Deep Neural Networks which reaches mAP 0.62 on Caltech 256 dataset.
- 2015 **An Efficient Ray-tracing Render Engine**.
  - Most of modern render engine features - shadow, reflection, refraction, diffuse, super-sampling.
  - Support reading from 3d texture file (SMF / OBJ).
  - Used octree to avoid unnecessary intersection check, and openmp for parallel acceleration.