# Qiyu Dai

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## Education

○ **School of Software & Microelectronics, Peking University**                    **Beijing, China**
   *Master Student in Computer Technology*                                        *09/2019 - present*
   - Research interests: computer vision, deep learning.

○ **School of Computer Science, Wuhan University**                               **Wuhan, China**
   *Double B.S. in Computer Science*                                             *02/2017 - 07/2019*
   - GPA 3.91/4.0. Ranking top 5%.

○ **School of Power and Mechanical Engineering, Wuhan University**               **Wuhan, China**
   *B.S. in Energy Chemical Engineering*                                         *09/2015 - 07/2019*
   - Ranking 1st for three years. Excellent graduate award.

## Publications

○ Qin Zou, Hanwen Jiang, **Qiyu Dai**, Yuanhao Yue, Long Chen, Qian Wang
  *Robust Lane Detection From Continuous Driving Scenes Using Deep Neural Networks*
  IEEE Transactions on Vehicular Technology, 2020

## Research Experience

**The STRUCT Team**                    **Wangxuan Institute of Computer Technology, Peking University**
*Advisor: Prof. Jiaying Liu*                                                     *09/2020 - 04/2021*

○ **Unaligned Fashion Translation and Manipulation**
   - Proposed a novel image translation and editing framework, enabling unaligned translation between design drafts and real fashion items, as well as image editing of an existing item via the draft.
   - Proposed an alignment and refinement network to ensure the edited image produced by the translation model closely aligns with the originally provided image: an alignment module for aligning the coarse edited image from translation model, and a user-guided inpainting module for refining the aligned edited image to obtain the ideal result.
   - Responsible for designing the editing framework. There is an extension of conference paper, going to be submitted to the journal.

**The NIS&P Lab**                                      **School of Computer Science, Wuhan University**
*Advisor: Prof. Qin Zou*                                                         *10/2017 - 11/2018*

○ **Lane Detection for Continuous Driving Scenes**
   - Proposed a novel segmentation algorithm for lane detection by using multiple frames of a continuous driving scene: a fully convolutional encoder-decoder for extracting and reconstructing feature map, and centered ConvLSTM for learning temporary feature propagation.
   - Collected a new large-scale continuous driving scenes datasets for quantitative evaluation, containing 12 challenging situations and rural roads situations.
   - Demonstrated a 98% accuracy on our dataset, especially best robustness on challenging situations, and SOTA performance on TuSimple lane dataset.

## Selected Projects

**GAN-based Automatic Iris Image Synthesis**                                    **Peking University**
*Machine Learning course project*                                                *05/2020 - 06/2020*

- Modeled iris image synthesis as supervised image-to-image translation to perform controllable generation via semantic label maps, and built an end-to-end system to handle batch synthesis as well as interactive editing.
- Proposed an efficient and fast semi-automatic pipeline for pre-processing iris dataset.
- As the team leader, responsible for technology selection, system design, code implementation, etc. Our team was awarded the *Excellent AI Algorithm Team* by Microsoft Research Asia & ByteDance Expert Committee.

**FUTURE CAMP 2018**                                                            **TAL AI Lab**
*The talent training program*                                                    *08/2018*

- Choose from 2,500 applicants to participate in the program (Top 8%).
- Designed a handwritten Chinese text detection algorithm based on CTPN model and a video motion analysis algorithm based on 3D-ResNets model, which won the *Excellent Project Award*.
- Built a complete end-to-end system for handwritten Chinese text detection and recognition, enabling to convert handwritten Chinese text on photos into editable messages, based on the project above.

## Skills

- **Languages:** Mandarin Chinese (Native), English (CET-6)
- **Programing Languages:** Python, C/C++
- **Tools:** PyTorch, TensorFlow2, OpenCV3, LaTeX

## Awards and Honors

- **Merit Student Award**, Peking University, 2020
- **Excellent Graduate**, Wuhan University, 2019
- **The Beijing CM Scholarship**, Wuhan University, 2018
- **The Goaland Scholarship**, Wuhan University, 2017
- **Merit Student Award**, Wuhan University, 2017
- **The Cnhili Scholarship**, Wuhan University, 2016
- **The Relations Instruments Scholarship**, Wuhan University, 2016
- **Excellent Student Award**, Wuhan University, 2016, 2018
- **Excellent Student Scholarship**, Wuhan University, 2016, 2017, 2018