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 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.
- **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%.

Publications

- **Qiyu Dai**, Shuai Yang, Wenjing Wang, Wei Xiang, Jiaying Liu
  Edit Like A Designer: Modeling Design Workflows for Unaligned Fashion Editing
  Submitted to ACM International Conference on Multimedia (ACM MM), 2021
- 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**
Research Assistant. Advisor: Prof. Jiaying Liu — *09/2020 - 04/2021*

- **Modeling Design Workflows for Unaligned Fashion Editing**
  - Proposed a new draft-driven fashion editing framework to model real-world design workflows, enabling the user to conveniently and naturally edit fashion items by modifying their corresponding design drafts like professional designers.
  - Proposed a novel Unaligned Fashion Editing Network, which combines key processes of the design draft and fashion item translation, coarse-to-fine alignment, feature-based editing and appearance refinement, to progressively render the photo-realistic editing fashion item results. To the best of our knowledge, our UFE-Net is the first to address the problem of draft-driven unaligned fashion editing.
  - Paper in submission.

The NIS&P Lab, School of Computer Science — **Wuhan University**
Research Assistant. 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