

KAIYUE SHEN

◇ (+41) 76 817 2997 ◇ kashen@ethz.ch ◇ skype-line.github.io

EDUCATION

ETH Zürich (QS 2022 Ranking: 9) 2019 - present
M.S. in Electrical Engineering & Information Technology GPA: 5.74 / 6

University of Electronic Science and Technology of China (EE Ranking in China: 2) 2015 - 2019
B.S. in Electronic Information Engineering GPA: 91.5 / 100 (Rank: 1 / 285)

WORK EXPERIENCE

Seervision AG Switzerland, Computer Vision Engineer Intern September 2021 - March 2022

- Tested multiple state-of-the-art algorithms and deployed the best into the product code base, significantly improving the mAP metrics of the person re-identification task.
- Generated a product-testing dataset and validated on [SV-DOP server](#) against various edge cases, which led to the discovery of influential factors for product design.

PROJECTS

Expressive 3D Human Avatar Modelling (*Paper under Review*) Apr. 2022 - Nov. 2022
Master Thesis, Advisor: Prof. Dr. Otmar Hilliges *Advanced Interactive Technologies Lab, ETHZ*

- Proposed and simulated a fully-controllable human avatar model using PyTorch, which can be learned from multiple input modalities: 3D scans, RGB-D data, etc.
- Built a coarse-to-fine registration pipeline that fits a parametric model to our motion-captured scans.
- Contributed a dataset of high-quality textured scans of clothed people performing varied body and hand movements and facial expressions.

Continual Learning for 2D Image Segmentation Oct. 2020 - Feb. 2021
Semester Project (Score: 5.75/6), Advisor: Prof. Dr. Roland Siegwart *Autonomous Systems Lab, ETHZ*

- Built a U-Net that continually learns the foreground and background segmentation task using TensorFlow.
- Implemented several methods for continual learning: feature distillation, elastic weight consolidation, progress & compress, etc, achieving the best fusion with the image segmentation task.
- Evaluated on NYU dataset and obtained 89.19% segmentation accuracy on new task while maintaining 89.9% on old task.

3D Object Reconstruction Using Azure Kinect Mar. 2020 - July 2020
Course project of 3D Vision (Score: 5.75/6)

- Presented an object reconstruction pipeline based on existing SLAM frameworks, and a learning-based depth error compensation method for Time-of-Flight cameras using Python and C++.
- Demonstrated the effectiveness of our method using the Azure Kinect RGB-D camera, and showed better performance compared with the depth correction method adopted by BAD SLAM.

2D Fashion Image Synthesis Using GANs July 2018 - June 2019
Bachelor Thesis (Score: 95/100), Advisor: Prof. Dr. Yang Hu *Institute of Image Processing, UESTC*

- Proposed a new Virtual Try-on (fashion image synthesis) method based on GANs using PyTorch.
- Evaluated on DeepFashion dataset, obtaining 50% FID improvement relative to the strongest competitor FiNet.
- Created image crawlers to built a dataset with 18,000+ pairs of images from the fashion website.

SKILLS

Programming: Python (PyTorch, TensorFlow, Scikit-Learn, Keras), C++, MATLAB, Linux, Git, LaTeX

Hobbies: Hiking, skating, skiing, badminton, cooking.