SHUO WEN

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EDUCATION

PhD in Computer Science Jan. 2023 - Ongoing
École Polytechnique Fédérale de Lausanne
Lab: Machine Learning for Biomedicine - Maria Brbic

M.S. in Computer Science Sept. 2019 - August.2022
École Polytechnique Fédérale de Lausanne (CGPA : 5.57/6)
· Coursework: Computer Vision, Image Processing, Image Analysis and Pattern Recognition, Machine Learning, Optimization for Machine Learning, Deep Learning, Advanced Algorithm

B.E. in Electronic Engineering Sept. 2015 - Jun. 2019
Shanghai Jiao Tong University (CGPA : 87.53/100)
· Coursework: C++ Programming, Data Structure, Networking Modeling and Algorithms in the Big Data Era

PUBLICATIONS

- **Cross-domain Open-world Discovery. Shuo Wen**, Maria Brbic. ICML 2024
- **Human Action Transfer Based on 3D Model Reconstruction.** Shanyan Guan* , **Shuo Wen***, Dexin Yang*, Bingbing Ni, Wendong Zhang, Jun Tang, Xiaokang Yang. AAAI 2019
- **Multi-layer Laser Radar Road-obstacle Detection System on Embedded Equipment.** P.R.C. Patent 201810418116.5, filed May 4, 2018.

TEACHING EXPERIENCE

Head Teaching Assistant & Best TA Award Sept. 2023 - Jun. 2024
CS-502: Deep Learning in Biomedicine, École Polytechnique Fédérale de Lausanne *Lausanne, CH*

Student Teaching Assistant Feb. 2021 - Jun. 2021
CS-442: Computer Vision, École Polytechnique Fédérale de Lausanne *Lausanne, CH*

RESEARCH EXPERIENCES

Max Planck Institute for Informatics Saarbrucken, DE
Lab: Real Virtual Humans Advisors: Prof. Gerard Pons-Moll, Prof. Pascal Fua, Julian Chibane *Jul. 2021 - Nov. 2022*

- **Project: A Generative Model of Detailed 3D Shapes**

- Finding a widely used generative formulation for generating **detailed** 3D shapes.
- Based on triplane features, we proposed an **unconditional** detailed 3D shape generation training pipeline. We also verified that triplane features can be generated by **directly** supervising the features without rendering.
- Proposed a **dataset** for detailed 3D human generation. (Both for unconditional and conditional generation.)

École Polytechnique Fédérale de Lausanne Lausanne, CH
Lab: AudioVisual Communications Laboratory
Advisors: Prof. Martin Vetterli, Dr. Matthieu Simeoni, Michalina Pacholska, Krzysztof Lis *Aug. 2020 - Jun. 2021*

- **Project: Automatic Flat Coloring**

- Proposed a pipeline which **automatically colorizes** line-arts with flat colors.
- Introduced a coloring model based on **image generation**. The model mixes several basic colors, which is a controllable method of automatic coloring, to generate colored images from line-arts.
- Introduced a coloring model based on **style transfer**. Based on recongnition and matching, the model colorizes the line-arts according to a reference color image.
- Created three **datasets** for training flat coloring model.

Shanghai Jiao Tong University Shanghai, CN
Lab: 1MoE Key Lab of Artificial Intelligence Advisor: Prof. Bingbing Ni *Mar. 2018 - Jun. 2019*

- **Project: Human Action Transfer Based on 3D Model Reconstruction**

- Designed a novel framework for human action transfer based on **3D model reconstruction**.

- Using **Graph Convolutional Network**, the model maintains the consistency of texture information.
- The framework can be easily generalized to perform action transfer on various target person without additional training.
- The first version of this work is published on **AAAI 2019** (co-first author).

Shanghai Jiao Tong University Shanghai, CN
Lab: CyberC3 Intelligent Vehicle Lab Advisor: Prof. Ming Yang *Jun. 2017 - Jan. 2018*

- **Project: Obstacle Detection System Based on Embedded System**

- Designed an obstacle detection system for **intelligent vehicle** and implemented it on embedded system (Raspberry Pi 3b).
- Applied RANSAC and variance transition point algorithms on **Robot Operating System (ROS)** platform.
- This system is applied to a **patent**.

Shanghai Jiao Tong University Shanghai, CN
Lab: Visual Media and Data Management Laboratory Advisor: Prof. Bin Sheng *Oct. 2016 - May. 2017*

- **Project: Football Game Tactical Analysis System Based on Multiview Video Analysis**

- Designed a system that analyses the football game tactics by tracking and analysing the position of players and soccer in the field with **KCF tracking algorithm**. Depending on multi-view videos, this system achieves a better performance.
- This system has been put into use in 2017 Shanghai Summer Universiade.

AWARDS

- Second Prize of Mathematical Contest in Modeling (MCM) 2018
- Second Prize of China Undergraduate Mathematical Contest in Modeling 2017
- Academic Excellence Scholarship of Shanghai Jiao Tong University 2016&2017
- Second Prize of National College Students Physics Competition 2016
- Outstanding Volunteer in Shanghai 2016&2017
- First place of Hope Cup Football Game 2018&2019
- First place of Sports Federation Cup Badminton Game 2016&2018

SKILLS

Programming Languages: Python, C/C++, SQL, Java, Scala, Matlab, VHDL, Verilog, LaTeX

Software Frameworks: PyTorch, TensorFlow, Keras, OpenCV

Languages: Chinese (native), English (C1), French (A1)