Shi Yufei

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EDUCATION

National University of Singapore (QS 8) Aug 2022 - Jun 2023
Computer Engineering Master
Course: Robot Perception (A+) , Deep Learning For Digitalization Techinologies (A-)

Sichuan University 985 Sep 2018 - Jun 2022
Electronic Information Engineering Bachelor School of Electronic Information
Professional Ranking: **6/125(4.8%)** Required Average Score **88.7**

Honors in school: Outstanding students (2019,2020); Outstanding Graduates of Sichuan University, National Inspirational Scholarship; Sanxin Scholarship (3%); Sichuan Province Comprehensive Quality A- level Certificate

Competition: American College Student Mathematical Modeling Contest (Finalist); Mathorcup Mathematical Modeling (National First Prize) ; the second prize of the Southwest Division of the National University Optoelectronic Design Competition; The three national college student innovation and entrepreneurship competitions are at the national, provincial, and school levels.

PROFESSIONAL EXPERIENCE

Sony China Feb 2022 - May 2022
Algorithm research intern Center for Research and Development

- Participate in the deep learning-based diseased chicken identification project, establish SSD, FSSD, IFSSD models for picture training, parameter adjustment, and finally realize the rapid and accurate identification of diseased chickens..
- Participate in Sony sensor environmental testing project pre-data processing process.
- Participate in the human motion capture project based on inertial sensor and monocular vision sensor fusion, use public 3D extraction method from motion video to extract motion information, use motion Builder and other tools to create bones, describe motion information, model binding work, animation stitching work.

PROJECT EXPERIENCE

Scene digitization for VR-AR (directed by Professor Zheng Mike, SHOU, NUS ShowLab) Aug 2022 - Present
3D scene reconstruction of gut and human body based on NeRF and other models

- Having a deep understanding for the NeRF,Nerfies.HyperNerf,D-NeRF , etc and testing in our human data.
- Proposed ColonNeRF, establishing a multi-level neural radiance field, leveraging multi-angle inputs and the VITO-Transformer to enhance information extraction capabilities. This approach yields promising reconstruction results on complex intestinal medical images. Submiting to **TMI (SCI Q1, IF=11) (Under Review)**.

AI generated Singapore image and video(directed by Professor Zheng Mike, SHOU, NUS ShowLab) Dec 2022 - Mar 2023

- Demonstrated expertise in finetuning image diffusion models, including DreamBooth and Textual Inversion, to generate personalized concepts.
- Collaborated on the innovative Tune-A-Video project (GitHub **Star 3.5k+ ICCV 2023**), which expertly translates textual input into consistent video and achieve style conversion. Primarily accountable for performance evaluation, comparing our proprietary model to SOTA T2V generation/editing methods (PnP and CogVideo), demonstrating competitive results.

American College Student Mathematical Modeling Contest- (Grand Prize Nomination) Feb 2021 - Feb 2021

- Select multiple linear regression models, ARIMA models, LASSO regression, Logistic models and cellular automata models to simulate the competitive process of fungal growth and reproduction in different environments, and optimize the content to be published in the **EI conference** (First Author)

Cerebral blood oxygen detector based on near infrared light Dec 2020 - Oct 2021

- Developed a complete set of non-invasive, high-sensitivity, low-cost cerebral blood oxygen detection equipment
- Responsible for near-infrared light-emitting receiving device data reception and processing, and carried out the system design serial screen operation interface, and applied for the National utility model patent

PATENTS AND PAPERS

Yufei Shi, Beijia Lu, Jia-Wei Liu, Ming Li, Mike Zheng Shou , ColonNeRF: Hierarchical Neural Radiance Fields for High-Fidelity Long-Sequence Colon Reconstruction , ***IEEE Trans. Medical Imaging*** *(under review)*

Jay Zhangjie Wu, Yixiao Ge, Xintao Wang, Stan Weixian Lei, Yuchao Gu, **Yufei Shi**, Wynne Hsu, Ying Shan, Xiaohu Qie, Mike Zheng Shou, *Tune-A-Video: One-Shot Tuning of Image Diffusion Models for Text-to-Video Generation,* ***ICCV 2023****, Github https://github.com/showlab/Tune-A-Video 3.5k*

Yufei Shi, Yijiang Guan, Dingye Zhang, *Exploration of the Ability of Fungi for Decomposing Natural Resources Based on Multiple Regression Equation and Cellular Automata,Resource Exploration and Environmental Science (EI Conference)*

Utility Patent Based on Near Infrared Light Local Cerebral Oxygen Saturation Detection Equipment Patent **First Inventor**
Utility Patent an infrared communication device with relay and forwarding function **First Inventor**