Lu Yiming

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EDUCATION

Department of Automation, Tsinghua University Beijing, China
Bachelor of Engineering Aug. 2019-Present

- **GPA:** 3.48/4.0
- **Core Courses:** Computer Languages and Programming, Foundation of Artificial Intelligence, Digital Image Processing, Operations Research, Bases and Application of Digital Video, Pattern Recognition and Machine Learning

RESEARCH EXPERIENCE

Instant NGP and Drone Swarm (Reproduction from NVIDIA)
Tsinghua BBNC Laboratory Project Jan. 2022-May 2022

- Utilized the large-scale viewpoint under drone swarm to shoot;
- Learned about CUDA programming and managed to convert executable CUDA programs into Python;
- Modeled the full scene rendering through NeRF in seconds (accelerated by hash code) by calculating viewpoints of camera arrays.

HCA-SCI Relating Research and Pipeline Construction
Tsinghua BBNC Laboratory Project Jan. 2022

- Built an HCA-SCI system with a dynamic LCoS and a high-resolution lithography mask;
- Implemented a PnP reconstruction algorithm with cascaded denoisers for high quality reconstruction;
- Achieved a 10-mega pixel SCI system to capture high-speed scenes, reaching a high throughput of 4.6G voxels per second.

Research on the iSMOD (An Integrative Browser for Image-based Single-Cell Multi-omics Data)
Tsinghua BBNC Laboratory Project Jul. 2021-Oct. 2021

- Processed the Multi-omics data through Python, designed the front-end and back-end of the webpage, managed the database by means of SQL, and drew the graphical statistics by R Script;
- Independently learned how to use Python and R Programming by reading and communicating with senior fellows;
- Wrote the research paper *i-SMOD: An Integrative Browser for Image-Based Single-Cell Multi-omics Data* which has been submitted to *Nucleic Acids Research* and awaits publication.

Compact Gigapixel Video Acquisition System and Algorithm Development
Student Research and Training Project Apr. 2021-Jul. 2021

- Critically went through the papers on image/video caption from CVPR, ICCV, and ECCV with source code;
- Aggregated and reproduced neural network applications in super-resolution and learned how to conduct a literature survey.

COURSE PROJECT

Clothing Color Matching | Pattern Recognition and Machine Learning Jun. 2022
SR Application in Mobile Devices | Bases and Application of Digital Video Jun. 2022
Application of Ethereum | Principle and Practice of Block Chain Jun. 2022
Fingerprint Recognition and Enhancement, *Trachea and Lung Segmentation of CT Images*, *Image Space and Style Transformation* | Digital Image Processing Oct. 2021-Jan. 2022
Facial Expression Recognition Based on Deep Learning | Foundation of Artificial Intelligence Dec. 2021
Prototype Computer System Design Based on FPGA | Computer Principles and Applications May 2021
Visual Hull Multi-View Reconstruction | Data Structures Jan. 2021
Development of Live Stream Teaching Tool "Lei Classroom" | C++ Programme Design and Training Jun. 2020

AWARDS

National Engineering Practice and Innovation Ability Competition "Excellent Achievement Award" Nov. 2021
Sponsored by The Ministry of Education
Project: Indoor Environment Reconnaissance Vehicle Based on TI-RSLK Suite

The 1st Prize in John Ma Cup Swimming Competition | *School Level Competition* Apr. 2021

The 3rd Prize in 2020 Hardware Design Competition | *School Level Science and Technology Competition* Sep. 2020

SKILLS & COMPETENCIES

Deep Learning Mastery: PyTorch, SCI (snapshot compressive imaging), NeRF | C++, Python, MATLAB

Software Skills: Linux, GIT, Latex, Markdown, MS Office

English Ability: Chinese (Native Speaker), English (SAT:1490, TOEFL:105)

Interests and Hobbies: piano, classical music, swimming