YEDI ZHANG

E-mail: yedizhang@cuhk.edu.hk | Website: Leviosaaaa

EDUCATION

Huazhong University of Science and Technology Sep 2018 - Jul 2022 (Expected)

Bachelor of Biomedical engineering, School of Engineering Science Wuhan

- Overall GPA: 3.9 / 4.0
- Representative courses: Algorithm Design and Analysis, Computer Systems and Data Structures, Electronic Devices and Circuits (Ⅰ)(Ⅱ), Digital Signal Processing, Fundamentals of Machine Learning, Computational Neuroscience.

RESEARCH INTERESTS

3D Vision, Deep Learning, Computer Assisted Surgery.

PUBLICATIONS

Qiang Li, Yedi Zhang, Hongkuan Shi. "Unsupervised Learning-Based Depth and Ego-Motion Estimation for Monocular Endoscopy". Chinese Patent (under review).

RESEARCH EXPERIENCES

Neural Rendering for Dynamic Surgical Scenes Jul 2021 - Present

Department of Computer Science and Engineering, CUHK.

Advisor: Prof. Qi Dou

- Working on a neural rendering framework for novel view synthesis in dynamic surgical scenes.

Depth and Ego-Motion Estimation in Monocular Endoscopy Jun 2020 - Jun 2021

Wuhan National Laboratory for Optoelectronics, HUST.

United Imaging Intelligence Co., Ltd.

Advisor: Prof. Qiang Li

- Composed a patent presenting my proposed method.
- Developed an unsupervised learning method for real-time depth and ego-motion estimation in monocular endoscopy.
- Verified the capability of traditional 3D reconstruction algorithms and identified the weaknesses.
- Reviewed >150 papers about augmented reality in robotic surgery and unsupervised depth estimation methods; summarized and categorized them; wrote a report (Augmented Reality in Robotic Surgery).

Neuron Tracing of 3D Optical Microscopic Image of Brain Oct 2018 - Dec 2018

Wuhan National Laboratory for Optoelectronics, HUST.

Advisor: Prof. Xiangning Li

- Analyzed the neural circuit by labeling the 2D and 3D image of mice's brain with Amira.
- Reviewed papers on Micro-Optical Sectioning Tomography (MOST).

Photovoltaic Experiments for Middle School Students Jan 2021 - Present

Wuhan National Laboratory for Optoelectronics, HUST.

Advisor: Prof. Yue Hu

- Designed a set of photovoltaic experiments tailored for middle school students based on simplified cutting-

edge research experiments.

- Developed a website displaying the project: Photovoltaic Web.

ACADEMIC ACTIVITIES

Summer School at Harvard University Jul 2019 - Aug 2019

Harvard Medical School, Brigham and Women's Hospital Boston, USA

- Topic: Big Data and Artificial Intelligence in Healthcare.
- Final presentation: A Surgery Glass System with AR

Winter School at Chinese University of Hong Kong Jan 2019

Department of Biomedical Engineering Hong Kong

- Topic: Microrobots in Minimally Invasive Surgery.

COMPETITION EXPERIENCES

2020 COMAP Mathematical Contest in Modeling Feb 2020

Second Prize, Consortium for Mathematics and Its Application

- Provided a complete solution to an unfamiliar problem (fish migration) in 96 hours, along with two teammates.
- Conducted literature review, mathematical modeling, programming, and thesis writing.
- Entry paper: Migrating Fish, Migrating Fishery

14th IET Present Around the World English Speaking Competition Apr 2019 - May 2019

Champion in HUST district, Institution of Engineering and Technology Beijing

- Delivered a speech about Noise Cancellation Methods in Earphones in a popular science style.
- Won the Championship in the HUST district and Excellent Finalist in the China District.
- Presentation slides: Noise Cancellation Methods in Earphones

SKILLS

- Programming languages: Python, Matlab, C/C++, Verilog.
- Software & Tools: Pytorch, OpenCV, Meshlab, Git, EndNote, Office.

STANDARD TESTS

- TOEFL: 105 (Writing: 27, Speaking: 23, Listening: 27, Reading: 28)
- GRE: 320 (Analytical Writing: 4.0)

MISCELLANEA

- Interests: Badminton (member of HUST badminton team), Tennis (member of HUST tennis team), Piano, Rubik's Cube.
- Activities: Student Union, Nutcracker Share (a commonweal sharing platform for overseas study).