Shuhong Zheng

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EDUCATION

University of Illinois, Urbana-Champaign (UIUC) — Illinois, U.S.
M.S. in Computer Science (Research-Oriented, Thesis-Based) — Aug. 2022 – May 2024 (expected)

Peking University (PKU) — Beijing, China
B.S. in Computer Science — Aug. 2018 – June 2022

RESEARCH EXPERIENCE

University of Illinois, Urbana-Champaign (UIUC) — Illinois, U.S.
Research Intern Guided by Prof. Yuxiong Wang — July 2021 – Present

– Working on scene understanding, based on neural radiance fields (NeRF)

Wangxuan Institute of Computer Technology, Peking University (PKU) — Beijing, China
Research Intern Guided by Prof. Jiaying Liu — Oct. 2020 – July 2022

– Working on image enhancement and human motion topics

PUBLICATIONS/MANUSCRIPTS

1. Mingtong Zhang*, **Shuhong Zheng***, Zhipeng Bao, Martial Hebert, and Yuxiong Wang. Beyond RGB: Scene-Property Synthesis with Neural Radiance Fields. *IEEE/CVF Winter Conference on Applications of Computer Vision (**WACV**)*, 2023. **(* Equal Contribution, Co-First Author) (First-Round Acceptance)**
   Invited Paper at Workshop on AI for Creative Video Editing and Understanding. *European Conference on Computer Vision (**ECCV**)*, 2022.

2. **Shuhong Zheng**, Zhipeng Bao, Martial Hebert, and Yuxiong Wang. MT-NeRF: Revisiting Multi-Task Learning with Neural Radiance Fields. Submitted to *IEEE/CVF Conference on Computer Vision and Pattern Recognition (**CVPR**)*, 2023.

3. Haofeng Huang, **Shuhong Zheng**, Wenhan Yang, Lingyu Duan, and Jiaying Liu. Low-Light Enhancement with Ambient Guidance via Deformable Band Regression. Submitted to *IEEE Transactions on Image Processing (**TIP**)*.

COMPETITIONS

- **Winner** of the Grand Challenge on *IEEE International Workshop on Multimedia Signal Processing (**MMSP**)*, 2021
  First Place on both IR (Image Restoration) track and IE (Image Editing) track, and the ***Final Winner*** of the ***MMSP 2021 Grand Challenge***

TEACHING

- **Teaching Assistant** CS 361 - Probability and Statistics for Computer Science — Fall 2022
  Host a discussion section for students, including lecture, course review and organizing discussion

Standardized Tests

- **TOEFL iBT**   Mar. 2021
  106 (Reading 28, Listening 29, Speaking 24, Writing 25)
- **GRE**   Oct. 2020
  331 + 3.5 (Verbal 161, Quantitative 170, Analytical Writing 3.5)

Scholarships and Awards

- Excellent Graduate, Peking University   2022
- Merit Student, Peking University   2021
- Peking University Scholarship (Third-Class), Peking University   2021
- Academic Excellence Award, Peking University   2020
- Academic Excellence Award, Peking University   2019

Other Projects

- **A Survey on High Dynamic Range (HDR) Imaging**
  Conduct a survey and write a survey paper on HDR imaging, starting from classical traditional methods to deep learning methods. [pdf]
- **Image Classification**
  Participate in the competitions of 50 scenes and 180 fine-grained bird species on Kaggle (https://www.kaggle.com/).
- **AI Poet**
  Use deep learning methods to train an AI Poet that can write ancient Chinese poems like humans.
- **Image Restoration**
  Use both traditional methods and deep learning methods to restore images damaged by random noise.
- **News Classification**
  Use both traditional methods and deep learning methods to classify the news into different topics according to their titles.
- **Lab on Operating System**
  Implement and optimize the functions of a toy operating system, including process management, memory system and file system.
- **Game AI**
  Implement Game AIs on two games (*the Amazons* and *the Tank*) and compete on Botzone (https://www.botzone.org.cn/). Also design an interface for humans to play *the Amazons* with one another or against an AI player.

Programming Skills

- **Programming Languages:** Python, C/C++, MATLAB, Verilog HDL
- **Machine Learning Frameworks:** PyTorch, TensorFlow, Keras