

YANG ZHENG

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EDUCATION

Tsinghua University, Beijing, P.R.China

Bachelor of Engineering in Automation *Aug 2018 - Jul, 2022 (expected)*

Bachelor of Psychology (second degree) *Aug 2019 - Jul, 2022 (expected)*

- **GPA: 3.92/4.0, Ranking: 3rd/174**
- **2019 secretary** of the sports competition department in the student union of the Department of Automation

Core Courses

- **Mathematics:** Calculus A (4.0/4.0), Linear Algebra (4.0/4.0), Introduction to Complex Analysis (4.0/4.0), Probability and Statistics (4.0/4.0), Numerical Analysis and Algorithms (4.0/4.0).
- **CS:** Computer Languages and Programming (4.0/4.0), C++ Program Design and Training (4.0/4.0), Data Structure and Algorithms (4.0/4.0), Operating Systems (4.0/4.0), Fundamentals of Computer Graphics (4.0/4.0).

SCHOLARSHIPS & AWARDS

- **2020 Jiang Nanxiang Scholarship** (Highest scholarship for juniors in Tsinghua, < **0.1%**)
- **2019 National Scholarship** (Highest scholarship given by the government of China, < **0.1%**)
- **2019 Tsinghua Innovation Award of Science and Technology** (Awarded to undergraduate students with excellent research potentials, <1%)
- **2019 3rd place** in the 21th **Electronic Design Competition**, Tsinghua University
- **2018 2nd place** in the 2nd **Artificial Intelligence Challenge**, Tsinghua University

PUBLICATIONS & MANUSCRIPTS

- 1 **Yang Zheng**, Fei Xia, Tolga Birdal, Yanchao Yang, Yueqi Duan, Leonidas J. Guibas. 6D Camera Relocalization in Visually Ambiguous Extreme Environments. In submission to RA-L with ICRA2022.
- 2 **Yang Zheng***, Ruizhi Shao*, Yuxiang Zhang, Tao Yu, Zerong Zheng, Yebin Liu. DeepMultiCap: Performance Capture of Multiple Characters Using Sparse Multiview Cameras. Accepted by *2021 IEEE/CVF International Conference on Computer Vision (ICCV)*. [\[ArXiv\]](#)[\[Project Page\]](#)
- 3 Yongming Rao, Wenliang Zhao, **Yang Zheng**, Yansong Tang, Jiwen Lu, Jie Zhou. VideoABC: A Real-World Video Dataset for Abductive Visual Commonsense Reasoning. [\[PDF\]](#)

RESEARCH INTEREST

Fields	3D Vision, Human Reconstruction, Video Understanding
Methods	Deep Learning, Neural Networks

RESEARCH EXPERIENCES

Stanford University, CA, U.S.

Geometric Computing Group, Department of Computer Science

Apr, 2021 – Sep, 2021

Research Assistant, Advisors: Profs. [Leonidas J. Guibas](#)

Project: 6D Camera Relocalization in Visually Ambiguous Extreme Environments

- Extended the scope of the camera relocalization to visually ambiguous extreme environments, e.g., underwater or extraterrestrial terrains, where images are in low quality and filled with ambiguous elements such as sands and rocks.
- Proposed a robust system by introducing hierarchical localization pipeline combined with temporal information to handle the ambiguity, and designed a novel network for image enhancement in spirit of benefiting the downstream feature based reconstruction and localization.
- Demonstrated the state-of-the-art performance in extreme scenes and comparative results on common benchmarks.

Tsinghua University, Beijing, China

Broadband Network & Digital Media Lab, Department of Automation

Jul, 2020 – Mar, 2021

Research Assistant, Advisors: Profs. [Yebin Liu](#)

Project: DeepMultiCap: Performance Capture of Multiple Characters Using Sparse Multiview Cameras

- Proposed a novel method for high-fidelity multi-view reconstruction of multiple interacting characters by introducing an attention-aware coarse-to-fine reconstruction pipeline.
- Firstly achieved detailed reconstruction of clothed humans in real world multi-person scenes from only sparse view inputs.
- Contributed and made public of a high-quality 3D human dataset, MultiHuman, containing 150 multi-person scans with detailed geometry and photorealistic texture.

Tsinghua University, Beijing, China

Intelligent Vision Group, Department of Automation

Jun, 2019 – Apr, 2020

Research Assistant, Advisors: Profs. [Jiwen Lu](#) & [Jie Zhou](#)

Project: VideoABC: A Real-World Video Dataset for Abductive Visual Commonsense Reasoning

- Conceptualized a new task of abductive visual commonsense reasoning that requires the vision systems to infer the most plausible sequence of steps given two observations that describe the initial configuration and desired goal.
- Introduced a real-world video dataset for abductive visual commonsense reasoning task, which consists of 46,354 clips derived from 11,827 videos.
- Proposed a dual reasoning network by leveraging bi-directional RNN to capture the long-term temporal dependencies, and thus significantly outperformed baseline models.

PROGRAMMING SKILLS

Proficient	Python, Pytorch, C/C++, Latex, Markdown
Familiar	TensorFlow, MATLAB, Qt, Linux, etc.

LANGUAGE SKILLS

TOEFL iBT	104/120 (Reading 30, Listening 24, Speaking 24, Writing 26)
GRE	330/340+3.5/6.0 (Verbal 160, Quantitative 170, Analytical Writing 3.5)