

Zeen (Harry) Chi

✉ chize@shanghaitech.edu.cn | ☎ +86 180 5320 6011 | 📍 Shanghai, China
🏠 www.harrychi.com | 🌐 [boynextdoor-cze](https://boynextdoor-cze.github.io) | [in](https://www.linkedin.com/in/zeen-harry-chi) Zeen (Harry) Chi

EDUCATION

- **ShanghaiTech University** Shanghai, China
B.Eng. Candidate, Computer Science Sept. 2020 - Present
 - GPA: **3.97/4.0** (rank **1/248** in school) | Major GPA: **4.0/4.0**
 - Selected Coursework: Introduction to Machine Learning (A+), Computer Graphics (A+), Artificial Intelligence (A+), Computer Architecture (A+), Probability and Statistics (A+)
- **Massachusetts Institute of Technology (MIT)** Cambridge, MA
Undergraduate Exchange Student, Computer Science Feb. 2023 - May 2023
 - GPA: **5.0/5.0**
 - Coursework: Advances in Computer Vision (A), Matrix Methods (A)

PUBLICATIONS

(* indicates equal contribution)

- **Incremental Human-Object Interaction Detection with Invariant Relation Representation Learning** Under Review
Yana Wei*, Zeen Chi*, Chongyu Wang, Yu Wu, Shipeng Yan, Yongfei Liu, Xuming He
[[paper](#)]
- **Dynamic Neural Fields for Learning Atlases of 4D Fetal MRI Time-series**
Zeen Chi*, Zhongxiao Cong*, Clinton Wang, Yingcheng Liu, E. Abaci Turk, P. Ellen Grant, S. Mazdak Abulnaga, Polina Golland, Neel Dey
Medical Imaging Meets NeurIPS Workshop 2023
[[paper](#)][[code](#)][[poster](#)]

RESEARCH EXPERIENCE

- **MIT CSAIL, Medical Vision Group** Cambridge, MA
Research Assistant, advised by Prof. Polina Golland and Dr. Neel Dey Mar. 2023 - Aug. 2023
 - **Implicit Neural Representation for 4D Fetal MRI Time-series Registration and Atlas Learning**
 - * Proposed to frame subject-specific atlas building as learning a neural field of deformable spatiotemporal observations
 - * Applied the proposed method to create subject-specific atlases and motion stabilization of dynamic BOLD MRI time-series of fetuses *in utero*
 - * Constructed high-quality atlases with competitive registration performance and $\sim 5-7\times$ faster training compared to conventional and deep learning-based baselines
- **ShanghaiTech, Perception Learning and UnderStanding (PLUS) Lab** Shanghai, China
Research Assistant, advised by Prof. Xuming He
 - **Incremental Learning for Human-Object Interaction Detection** Aug. 2023 - Nov. 2023
 - * Proposed a novel incremental learning setting for human-object interaction detection with joint concentrations on catastrophic forgetting, interaction drift, and zero-shot HOI detection
 - * Proposed an incremental relation distillation framework to resolve the aforementioned challenges via disentangling the learning of objects and relations, focusing on robust and invariant relation representation learning
 - * Outperformed state-of-the-art continual learning and zero-shot baselines with more than 2% improvement in mean Average Precision (mAP) on mainstream HOI datasets
 - **Long-tailed Recognition in Human-Object Interaction Detection** Aug. 2022 - Dec. 2022
 - * Investigated long-tailed distribution in HOI datasets and assessed multiple established mainstream methods for mitigating the long-tailed problem in HOI detection

COURSE PROJECTS

- **Adversarial Attacks and Defense in Image Classification** [[code](#)] Cambridge, MA
MIT 18.0651: Matrix Methods in Data Analysis, Signal Processing, and Machine Learning Apr. 2023 - May 2023
 - Thoroughly reviewed the development of adversarial attack and defense in image classification
 - Implemented representative adversarial attack and defense algorithms, and conducted extensive experiments on the ImageNet dataset to evaluate and compare their performances and robustness.
- **Ray Tracing NURBS Surfaces** [[code](#)] Shanghai, China
ShanghaiTech CS171: Computer Graphics I Dec. 2022 - Jan. 2023
 - Implemented a path tracer with global illumination for directly rendering untrimmed NURBS surfaces without tessellation; created more than 3300 C++ baseline
 - Applied surface refinement for better rendering quality and efficiency
 - Constructed a BVH to maintain the surface sub-patches and accelerate the ray-patch intersection process
- **AI-Agent Chinese Chess** [[code](#)] Shanghai, China
ShanghaiTech CS181: Artificial Intelligence Nov. 2022 - Jan. 2023
 - Created a multi-functional Chinese Chess game with multiple AI agents with Python and C++

- Built the game panel for human players, with Pygame for Python and JUCE for C++, respectively
- Implemented three AI agents, including Minimax Search, Q-Learning, and Monte-Carlo Tree Search
- **Chrome Dino Minigame on Longan Nano** [\[code\]](#) Shanghai, China
May 2022 - June 2022
 - *ShanghaiTech CS110: Computer Architecture I*
 - Implemented Chrome Dino pixel game on a Longan Nano development board with RISC-V and C
 - Designed software-hardware interfaces to utilize integrated and external board buttons for game control
- **Who is Flying over?** [\[code\]](#)[\[demo\]](#) Shanghai, China
Dec. 2020 - Jan. 2021
 - *ShanghaiTech SI100B: Intro to Information Science and Technology*
 - Built a website from scratch on Raspberry Pi that displays real-time information about regional flights
 - Utilized web crawler for data fetching and simultaneously displayed the data via LED and website
 - Implemented a feature-rich control panel on the website for real-time human-computer interactions, including region selection and LED control
 - Won the Excellent Course Project Award (**Top 1**) [\[poster\]](#)

HONORS AND AWARDS

- ShanghaiTech International Exchange Program **Scholarship**, ~\$12,000 June 2023
- ShanghaiTech **Outstanding Student** (Ranked in the **top 2%** of the school) Jan. 2022
- ShanghaiTech **Outstanding Student** (Ranked in the **top 3%-7%** of the school) Dec. 2022
- The **Outstanding Individual** of ShanghaiTech Career Trek Program Nov. 2022
- The **Outstanding Individual** of ShanghaiTech Social Research Program in Chinese Poor Areas Nov. 2021
- **First Prize**, the 2018 National Olympiad in Informatics in Provinces, Shandong Dec. 2018

SKILLS

- **Languages:** Python, C, C++, MATLAB, RISC-V
- **Tools:** PyTorch, OpenGL, Git, ITK-SNAP

VOLUNTEER EXPERIENCE

- **Shanghai Marathon 2022** Shanghai, China
Nov. 2022
 - *Assisted athletes in check-in*
- **RISC-V World Conference China 2021** Shanghai, China
June 2021
 - *Assisted the organizer to set up the venue and provided technical support to the participants*
- **Undergraduate Admissions Presentation** Qingdao, China
Jan. 2021 & June 2022
 - *Lectured on ShanghaiTech University to high school students in Qingdao*
- **COVID-19 Lockdown Campus Voluntary Service** Shanghai, China
Apr. 2022 - May 2022
 - *Assisted in COVID test and distributing supplies during the lockdown of Shanghai*

LANGUAGE

- **Chinese:** Native
- **English:** Fluent
 - TOEFL: 105 with R28/L26/S22/W29
 - GRE: 330 + 4.0 with V160/Q170