

# Zeen (Harry) Chi

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## EDUCATION

- **Massachusetts Institute of Technology (MIT)** Cambridge, MA  
*Undergraduate Special Student Program, Computer Science* Feb. 2023 - Present
  - **Coursework:** Advances in Computer Vision, Matrix Methods
- **ShanghaiTech University, School of Information Science and Technology (SIST)** Shanghai, China  
*B.Eng. Candidate, Computer Science* Sept. 2020 - Present
  - **Overall GPA:** 3.97/4.0 (rank 1/248 in SIST)
  - **Major GPA:** 4.0/4.0
  - **Selected coursework:** Computer Graphics (A+), Artificial Intelligence (A+), Introduction to Machine Learning (A+), Computer Architecture (A+), Mathematical Analysis I & II (A+ & A), Probability and Statistics (A+)

## RESEARCH EXPERIENCE

- **Long-tailed Recognition in Human-Object Interaction Detection** Shanghai, China  
*Undergraduate Researcher, ShanghaiTech PLUS Lab, advised by Prof. Xuming He* Sept. 2022 - Jan. 2023
  - Proposed a method of introducing the overall information of human posture as an a prior cue to improve the confidence level of the HOI detection output for the corresponding possible categories
  - Reviewed papers on cutting-edge Transformers-based HOI detection algorithms and investigated instances of long-tailed distribution, especially the double long-tail of objects and actions in HOI datasets, and their impacts on detection results
  - Applied and evaluated multiple existing mainstream methods to alleviate the long-tailed distribution of HOI datasets

## COURSE PROJECTS

- **Chinese Chess [code]** Shanghai, China  
*ShanghaiTech CS181: Artificial Intelligence* Nov. 2022 - Jan. 2023
  - Created a multi-functional Chinese Chess game with multiple AI agents via 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
- **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
- **Chrome Dino Minigame on Longan Nano [code]** Shanghai, China  
*ShanghaiTech CS110: Computer Architecture I* May 2022 - June 2022
  - Implemented Chrome Dino pixel game on Longan Nano development board with RISC-V assembly language and C
  - Utilized integrated and external buttons of the board for UI and game control, respectively
- **Who is Flying over? [code][demo]** Shanghai, China  
*ShanghaiTech SI100B: Introduction to Information Science and Technology* Dec. 2020 - Jan. 2021
  - Built a website 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 fancy control panel on the website for real-time human-computer interactions, including region selection and LED control
  - Won an Excellent Course Project Award (**Top 1**) [poster]

## HONORS AND AWARDS

- ShanghaiTech **Scholarship (Top 2%** of SIST students) Jan. 2022
- ShanghaiTech **Scholarship (Top 3%-7%** of SIST students) Dec. 2022
- The **Outstanding Individual** of industry practice Nov. 2022
- The **Outstanding Individual** of social practice Nov. 2021
- **First Prize**, the 2018 National Olympiad in Informatics in Provinces, Shandong Dec. 2018

## SKILLS

- **Languages:** Python, C&C++
- **Tools:** OpenGL, PyTorch, Git

## VOLUNTEER EXPERIENCE

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

## LANGUAGE

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- **Chinese:** Native
- **English:** Fluent
  - TOEFL: 105 with R28/L26/S22/W29