Zeen (Harry) Chi

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EDUCATION

- **Massachusetts Institute of Technology, Department of EECS** — Cambridge, MA
  Undergraduate Special Student Program, Computer Science — *Feb. 2023 - Present*
  - **Coursework:** Advances in Computer Vision, Design and Analysis of Algorithms, Matrix Methods, Introduction to Statistical Data Analysis

- **ShanghaiTech University, School of Information Science and Technology (SIST)** — Shanghai, China
  B. Eng. Candidate, Computer Science and Technology — *Sept. 2020 - Present*
  - **Overall GPA:** 3.97/4.0 (rank 1/247 in SIST)
  - **Major GPA:** 4.0/4.0
  - **Selected coursework:** Introduction to Information Science and Technology (A+), Computer Architecture I (A+), Introduction to Programming (A), Mathematical Analysis I & II (A+ & A), Probability and Statistics (A+), Discrete Mathematics (A+).

RESEARCH EXPERIENCE

- **Long-tailed Distribution of Datasets in Human-Object Interaction Detection** — Shanghai, China
  Undergraduate Researcher, PLUS Lab, advised by Prof. Xuming He — *July 2022 - Present*
  - Proposed a method of introducing the overall information of human posture as an a priori cue, to improve the confidence level of the HOI detection output for the corresponding possible categories
  - Reviewed papers of the state-of-the-art Transformers-based HOI detection algorithms, and investigated the instances of long-tailed distribution, especially the double long-tail of objects and actions, of HOI datasets, and their impacts on the results of detection
  - Applied multiple existing mainstream methods to alleviate the long-tailed distribution of HOI datasets, and evaluating their performance

COURSE PROJECTS

- **Chinese Chess** [code] — Shanghai, China
  CS181: Artificial Intelligence — *Nov. 2022 - Jan. 2023*
  - Proposed 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 Surface** [code] — Shanghai, China
  CS171: Computer Graphics I — *Dec. 2022 - Jan. 2023*
  - Implemented a path tracer with global illumination for directly rendering untrimmed NURBS surfaces without tessellation. +3300 C++ baseline created.
  - Applied surface refinement for better rendering quality and efficiency.
  - Constructed a BVH to maintain the surface patches and accelerate the ray-patch intersection process.

- **Chrome Dino Minigame on Longan Nano** [code] — Shanghai, China
  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 internal and external buttons for UI and game control respectively

- **Who is Flying over?** [code][demo] — Shanghai, China
  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 display the data via LED and website
  - Implemented a fancy control panel on website for real-time human-computer interactions, including region selection and LED controller
  - **Excellent Course Project (Top 1)** [poster]

HONORS AND AWARDS

- Scholarship (**top 2%** of SIST students) — Jan. 2022
- 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++, MATLAB
- **Tools:** OpenGL, PyTorch
- **Platforms:** Linux, macOS, Windows

Volunteer Experience

- **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

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