

# Xianzhe Fan

Tsinghua University

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## EDUCATION EXPERIENCE

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**Undergraduate in the Tsien Excellence in Engineering Program (TEEP)**      September 2021 - June 2025  
Tsinghua University, GPA: 3.84/4.00

**Research Intern at the School of Computer Science**      June 2024 - December 2024  
Carnegie Mellon University, Onsite  
(Supported by a Scholarship from Tsinghua University)

## SKILLS

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<b>Core Competencies</b>	Computer Vision, Machine Learning, Deep Learning, Audio Signal Processing, User Research, Data Analysis, Fluid Simulation, User Interface Design, Mechanical Design, Visualization
<b>Programming Languages</b>	Python, C/C++, Java, JavaScript, Go, HTML/CSS
<b>Libraries</b>	PyTorch, TensorFlow, React, Matplotlib
<b>Professional Software</b>	VSCode, Android Studio, Multisim, SolidWorks, AutoCAD, Adobe Audition, Adobe Photoshop, Figma
<b>English Level</b>	TOEFL: 106

## FIRST-AUTHOR ACADEMIC PAPERS

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**Xianzhe Fan**, Zihan Wu, Chun Yu, Fenggui Rao, Weinan Shi, and Teng Tu. 2024. [ContextCam: Bridging Context Awareness with Creative Human-AI Image Co-Creation](#). In Proceedings of the CHI Conference on Human Factors in Computing Systems (CHI'24), May 11–16, 2024, Honolulu, HI, USA. ACM, New York, NY, USA, 17 pages. [Link](#)

**Xianzhe Fan**, Qing Xiao, Xuhui Zhou, Yuran Su, Zhicong Lu, Maarten Sap, and Hong Shen. 2024. [Minion: A Technology Probe for Resolving Value Conflicts through Expert-Driven and User-Driven Strategies in AI Companion Applications](#). Under Review for CHI'25.

**Xianzhe Fan**, Qing Xiao, Xuhui Zhou, Jiaxin Pei, Zhicong Lu, Maarten Sap, and Hong Shen. 2024. [User-Driven Value Alignment: Understanding Users' Perceptions and Strategies for Addressing Biased and Discriminatory Statements in AI Companions](#). Under Review for CHI'25.

## PROJECT EXPERIENCE

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**[11] Measuring Social Biases in Large Vision-and-Language Models**      September 2024 - Present  
*CMU Research Project*

- Analyze the intrinsic sources of LVLMM biases.

**[10] Value Conflicts between Users and AI Companions**      May 2024 - September 2024  
*CMU Research Project*

- Submitted a first-author long paper to CHI'25.
- [Minion: A Technology Probe for Resolving Value Conflicts through Expert-Driven and User-Driven Strategies in AI Companion Applications](#).

**[9] User-Driven Value Alignment**      May 2024 - September 2024  
*CMU Research Project*

- Submitted a first-author long paper to CHI'25.
- [User-Driven Value Alignment: Understanding Users' Perceptions and Strategies for Addressing Biased and Discriminatory Statements in AI Companions](#).

## [8] Explainability of Intelligent Table Analysis and Question-Answering Systems Based on Retrieval Augmented Generation (RAG) December 2023 - Present

*Research Project*

- The method of LLM chain-of-thought prompting is used to break down complex tables and visually present the decomposed structure to users. A hybrid database storage method builds a more interpretable knowledge graph. A two-step retrieval method is employed: “Graph + Vector RAG” for fuzzy retrieval, followed by “Text2Cypher” for fine-grained retrieval. Empower users to simply control the system’s internal operation process and display mode.

## [7] Face Recognition System in Unconstrained Environments October 2023 - December 2023

*Course Project (Received a 4.0 in the “Introduction to Deep Learning” course.)*

- Designed an unconstrained face recognition system based on ResNet and Triplet Loss/Angular Loss algorithms, capable of determining if two photos are of the same person. The image recognition accuracy reached 92%.

## [6] GIX International Summer Research Program July 2023 - September 2023

*Summer Research Project*

- Researched integrating context awareness in human-AI co-creation of images. Submitted a first-author long paper to CHI and was accepted by CHI’24.
- [ContextCam: Bridging Context Awareness with Creative Human-AI Image Co-Creation](#)

## [5] Application of API Chain in AI Painting Interactive Agents March 2023 - September 2023

*SRT Research Project, Technical Leader of the “AI Research Project on Image Generation” Interest Group*

- Developed an AI painting website, converting users’ natural interactive expressions into control over the API Chain, enabling users to easily generate and modify images according to their needs. Lowered the technical barriers to AI painting and optimized user experience.

## [4] “Ijiaodui” Intelligent Customer Service Prompt Design January 2023 - March 2023

*Winter Research Project*

- Designed ChatGPT prompts and integrated its functions into the “Ijiaodui” WeChat public account customer service.

## [3] Visual Analysis and Algorithm Optimization of Dual Mic Noise Reduction March 2022 - March 2023

*SRT Research Project*

- Implemented dual microphone noise reduction, speech recognition, and visualization in Python and subsequently developed an Android app for mobile phones.

## [2] Context-Aware Smart Desktop Interaction March 2022 - June 2022

*Course Project (Received a 4.0 in the “Theory and Practice of HCI” course.)*

- Implemented context awareness based on technologies like facial recognition (yolov5).
- Privacy protection during group discussions, program handoff, mobile control of computers and computer replying to mobile messages, sit-to-unlock.

## [1] Chess Game Based on Qt April 2022 - May 2022

*Course Project (Received a 4.0 in the “Fundamentals of Computer Programming” course.)*

- Developed a chess game using Qt, including basic movement rules and advanced game mechanics (e.g., pawn promotion, castling, check, etc.). The game features a timer and a user-friendly interface. Supports AI vs. player and player vs. player modes.

## RELEVANT COMPUTER SCIENCE COURSES AND GRADES

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Data Structures	4.0
Introduction to Deep Learning	4.0
Pattern Recognition and Machine Learning	4.0
Fundamentals of Computer Programming	4.0
Theory and Practice of Human-Computer Interaction	4.0
Probability and Mathematical Statistics	4.0

Electrical Engineering and Electronics Technology	4.0
Computational Fluid Dynamics	4.0
GIX International Summer Research Program	4.0
Undergraduate Research Training Program (SRT) *2	4.0
Open Research for Innovative Challenges (ORIC)	4.0

## ACADEMIC SERVICE

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Conference Reviewer, MobileHCI 2024

## ACHIEVEMENTS

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“Tsinghua Scholar Talent Program” Scholarship	2021, 2022, 2023
“Excellence in Science and Technology Innovation” University-Level Scholarship	2022, 2023
Technical Leader of the “AI Research Project on Image Generation” under the Future Scientists and Information Technologists Interest Group	2023
Selected for the Xingjian College “HeYe Plan”	2023
Second Prize in the Beijing Division of the National College Students’ Mathematical Modeling Contest (Team Leader)	2022
“WuXing Cup” Third Prize and Academic New Star Award	2022
First Prize in the 38th National College Students’ Physics Competition	2021
First Prize at the Provincial Level in the 37th National High School Students’ Physics Competition	2020