

# Xin CAI

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## EDUCATION

**Shanghai Jiao Tong University, School of Design**

**Sept. 2020- Mar. 2024**

**Major:** Industrial Design

**Research Directions:** Interaction Design, Serious Game Design

**Shanghai Jiao Tong University, School of Mechanical Engineering**

**Sept. 2016- Jun. 2020**

**Major:** Mechanical Engineering

**Core Courses:** *Interaction Design, User Research, Value of Experience and Service Design, Thinking and Approach of Programming*

## ACADEMIC EXPERIENCES

### Human Factor/User Experience Research Projects:

**Huawei Large Model for Design, Huawei 2012 Lab**

**Jul. 2023- Apr. 2024**

- The research project aims to develop LLM-based design tools, including expert Q&A models in the design field and web page generation models
- Assisted in defining scenarios by combining product analysis and corporate user interviews to delineate functional requirements and operational processes
- Collected training data, including crawling data from design related materials and websites, using prompt engineering to obtain initial data from GPT, and extracting data from annotated images
- Conducted data cleaning and preprocessing, analyzed the distribution of the data, and restructured image annotation data based on training objectives to construct datasets
- Assisted in training model covering pre-training, SFT, hyperparameter tuning, model validation and debugging procedures

**OPPO Multi-Sensory Research, OPPO Software User Research and Experience Design Department**

**Apr. 2022- Apr. 2023**

- Investigated the human factors related to multisensory experiences in mobile interaction, exploring synergistic methods, key factors, and threshold values for multisensory experiences through psycho-physical experiments in given scenarios
- Participated in project planning, literature review, technical investigation, user research (interviews, questionnaires)
- Set up audio-vibration experiment platform, and collected data from representative mobile models
- Developed experimental interaction prototypes and audio-vibration mapping program, design and conducted human factor experiments
- Visualized and analyzed data, and generated actionable insights, resulting in one CHI paper and one patent

### Serious Game Design and Development:

**FaceHi- A Serious Game for Facial Paralysis Rehabilitation Based on Facial Recognition** **May- Jun. 2022**

- Participated in conceptual discussions, conducted literature review, user research and defined patient training needs, and product features
- Designed interactive exercises and game play, utilized facial expressions to engage users in therapeutic activities
- Developed implementation paths, completed product development with FaceTracking and BlendShape, and built Unity 3D scenes based on 2D hand-drawn and refined rendering details
- Won the second prize in China Collegiate Computing Contest Mobile Application Innovation Contest in 2022

**ChineseLab- An Augmented Reality Chinese Character Formation Enlightenment Game for Children**  
**Aug.- Nov. 2021**

- Participated in conceptual discussions and conducted extensive research on existing competitors in the market
- Combined Chinese character construction theory with gamification to set up overall framework structure, and designed gameplay and Interactive logic
- Developed AR interactive gameplay through Unity 3D, C#, ARFoundation, etc., and completed prototype development, subsequent rapid iteration, and profusion of effects with limited resources
- Gained the second prize in China Collegiate Computing Contest Mobile Application Innovation Contest in 2021 and IF Design Award 2024

**Course Projects:**

**Design Research- Research on Rental Service APP for International Students**  
**(Ant Financial Network Technology Co., Ltd. Cooperation Project)**  
**Apr. 2021- Jul. 2022**

- User Research: designed interview outline and observation outline, conducted recruitment of interview users, collection and analysis of interview results
- Requirement Analysis: completed the analysis of the accumulation of common and differential requirements regarding users' map experience; sorted the prioritization of requirements to transform the key points
- Functional Design: conversed requirement function and sorted prioritization of functions through brainstorming
- Low/High Fidelity Implementation: Utilized Figma to realize interactive prototyping and interactive logic implementation

**Story Collector- An Integrated Hardware and Software Entertainment Product for the Elderly**  
**Sept. – Dec. 2020**

- Responsible for literature research, user interview, user profile establishment, requirement analysis and requirement-function transformation
- Conducted embedded development through Python and Raspberry Pi to achieve recognition of real object functions and game interaction logic, as well as Bluetooth communication with iPad-side
- Developed game prototypes through Unity to implement interactive logic, collection and medal systems, and reward systems
- Completed 3D printing physical prototype production and assembly

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**PROFESSIONAL EXPERIENCES**

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**ByteDance**  
**Apr. – Oct. 2022**

**Technical Art/ Interaction Engineer (Intern)**

- Requirement Confirmation: conducted research on project effectiveness and competitor analysis; discussed with project managers and art team to determine implementation plans
- Programming and Digital Asset Production: created assets based on the company self-developed engine and DCC link, and used graphics to write shader to achieve rendering effects, wrote program logic for the development of related prop interactions methods; output the middle platform capability to support the development needs of business lines of ByteDance and produced three props to launch on TikTok
- Patent Application: Explored and developed new engine capabilities independently, completed the production of real-time flexible body simulation skirts in the artistic fitting and wearing project, accumulated rendering related technology implementation paths, and applied for one patent

**Shanghai Disney Resort**  
**Jul.- Oct. 2021**

**Imagination Engineer (Intern)**

- Design Asset Output: responsible for output of design asserts related to the resort
- Project Interconnection: coordinated with outsourcing companies to follow up on the actual implementation of resort facilities
- Engineering Management: followed up on venue construction projects, designed local building models, conducted engineering management through BIM, and synchronized virtual full scene construction with real

## EXTRACURRICULAR ACTIVITIES

### Design Studio

Jun. 2019- Sept. 2021

#### Leader

- Responsible for the photography and camera department, coordinating project requirements, and developing shooting plans
- Led the team to produce several short films, and provided portrait photography services for Shanghai Jiao Tong University teachers and students for a long time

### Dawn Volunteer Service Team of Cyrus Tang Foundation

Sept. 2018- Jun. 2019

#### Team Leader

- Responsible for volunteer recruitment, organization, and management
- Organized and carried out activities such as ‘Sunset Glow’ Elderly Care, Guzhen Volunteer Teaching, and Seven University Exchange in the Yangtze River Delta

### Overseas Study Tours to New Zealand

Summer Vacation from 2017 to 2019

#### Assistant

- Assisted in handling student school or daily affairs, and responded to emergencies
- Followed the itinerary and conducted English oral translation
- Responsible for journey recording, photography and video shooting, and post processing
- Showcased outstanding communication, collaboration, and stress resistance abilities

## PUBLICATIONS

**Title:** *Chinese Character Factory- A Design of Children's Chinese Character Construction Enlightenment Game Based on Augmented Reality Technology*

**Date:** 2022

**Journal:** AHFE Open Access, Vol. 39. AHFE International, USA

## AWARDS & CERTIFICATIONS

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|--|------------|
| ➤ <b>iF Design Award</b> (Communication/Apps/Software), iF Industrie Forum Design          | Mar. 2024  |
| ➤ Second Prize in China Collegiate Computing Contest Mobile Application Innovation Contest | 2022       |
| ➤ First-Class Graduate Study Scholarship (Top 10%)   | Sept. 2022 |
| ➤ <b>Red Dot Award</b> of Brands & Communication Design, Nordrhein- Westfalen eV           | Oct. 2021  |
| ➤ First-Class Graduate Study Scholarship (Top 10%)   | Sept. 2021 |
| ➤ <b>Golden Award</b> in Disney Imaginations Shanghai Design Challenge                     | 2021       |
| ➤ Second Prize in China Collegiate Computing Contest Mobile Application Innovation Contest | 2021       |
| ➤ Moral Education Scholarship of Cyrus Tang Foundation                                     | Jun. 2019  |
| ➤ Moral Education Scholarship of Cyrus Tang Foundation                                     | Jun. 2018  |

## ADDITIONAL INFORMATION

- **Languages:** Excellent English proficiency
- **Techniques:** Solid mastery of Unity3D, Blender, Photoshop, Premier; skillful in DCC Software
- **Programming Language:** C#, Python, Lua, GLSL/HLSL/CG
- **Self-assessment:**
  - Have a high sense of responsibility, strong learning, self-discipline, and teamwork ability
  - Positive and optimistic, courage to try new things
  - Willing to explore knowledge from different dimensions in different fields
  - Good at thinking about and selective learning the logic behind other's excellent behavior
- **Interests and Hobbies:**
  - Cycling: completed cycling on the Chongqing-Yunnan line (1100km) in 2016 and cycling on the Sichuan-Xizang line (2400km) in 2017
  - Motorcycle-Travel: crossed China from Shanghai to Lhasa with a total length of 4922km in 2023

- Photography: proficient in photography equipment such as cameras and drones; gained numerous awards in photography competitions; set up a photography association and organized more than ten photography activities; recruited more than one hundred members and operated the Campus Official Account with more than four thousand follows
- Outdoor sports: Via Ferrata, camping and hiking