

Xin CAI

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EDUCATION

Shanghai Jiao Tong University, School of Design **Sept. 2020- Mar. 2024**

Major: Mechanical Engineering

Research Directions: Interaction Design, Pan-Entertainment Product Design

Shanghai Jiao Tong University, School of Mechanical Engineering **Sept. 2016- Jun. 2020**

Major: Mechanical Engineering

Major Courses: *Interaction Design, User Research, Value of Experience and Service Design, C++, Python*

ACADEMIC EXPERIENCES

Human Factor/User Experience Research Projects:

Huawei Large Model for Design, Huawei 2012 Lab **Jul. 2023- Apr. 2024**

- 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 and analyzed the distribution of the data
- 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

Pan-Entertainment Product 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 and completed product development with FaceTracking and BlendShape
- 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

Course Projects:

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

- 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

PROFESSIONAL EXPERIENCES

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 venue construction based on Digital Twin

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', Guzhen County Supporting Education, and Seven University Exchange in the Yangtze River Delta
- Cultivated excellent organizational and coordination skills

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

Title: *Realism of Mobile Phone Typing Multi-Sensory Interaction: Can Simulating a Physical Keyboard Improve the User Experience?* (Under Review)

2023 CHI Conference on Human Factors in Computing Systems

AWARDS & CERTIFICATIONS

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| ➤ iF Design Award (Communication/Apps/Software), iF Industrie Forum Design | Mar. 2024 |
| ➤ Second Prize in China Collegiate Computing Contest Mobile Application Innovation Contest | 2022 |
| ➤ Red Dot Award of Brands & Communication Design, Nordrhein- Westfalen eV | Oct. 2021 |
| ➤ Golden Award 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, such as SubstanceDesigner and SubstancePainter
- **Programming Language:** C#, Python, Lua
- **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