Dingran Dai

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EDUCATION

Cornell University, Cornell Tech   **New York, NY, Aug 2025 – May 2027**

M.S. in Applied Info Science & Info System, Merit Scholarship

Relevant coursework: HCI, 3D Interaction Design, Interactive Devices Design, Ubiquitous Computing, Digital Fabrication

South China University of Technology, School of Architecture   **Guangzhou, China, Sep 2020 – Jul 2025**

B.Eng. in Urban & Rural Planning, GPA: 3.72/4.0

Honors: University Scholarship; Merit Student in School of Architecture

TECHNICAL SKILLS

Tools: Figma, Adobe Creative Suite (Photoshop, Illustrator, InDesign, Lightroom), Fusion 360, Rhino, AutoCAD

Programming & Data: Python, SQL, Git, Google Colab, Linux

Physical Computing: Arduino, Raspberry Pi, ESP32

WORK EXPERIENCE

Product Strategy, Mobile Gaming Performance and Thermal Strategy | Intern   **Shenzhen, China, Jun 2025 – Aug 2025**

- Deconstructed 50+ gameplay scenes to identify high-pressure interaction breakdowns, informing a performance optimization roadmap
- Led structured pre- and post-launch KOL interviews; standardized play settings & stress cases; translated into reports
- Produced internal competitive analysis briefs summarizing major product launches and technical optimizations across the mobile gaming ecosystem

Comparative Study of Urban Character in Guangdong and Zhejiang | Intern   **Guangzhou, China, Jun 2024 – Jul 2024**

- Built AI-assisted workflows and Python pipelines to scrape and process 250,000+ street-view images across 30 cities
- Applied CNN-based feature extraction to analyze historical façades and urban form patterns

Subdistrict Master Plan | Intern   **Guangzhou, China, Oct 2023 – Dec 2023**

- Conducted user research and space evaluation, synthesizing survey feedback into high-quality design deliverables
- Visualized multi-source spatial data to identify equity gaps, collaborating with stakeholders to propose user-centric solutions for urban accessibility

DESIGN EXPERIENCE

Portable Subway Keychain   **New York, NY, Feb 2026**

- Designed a glanceable, three-state interaction and interface system, iterating on visual hierarchy, iconography, and layout clarity through rapid prototyping
- Created interface demos and interaction flows informed by user insights and real-time transit data
- Designed and refined the physical and digital experience as a cohesive system, from screen layouts to enclosure aesthetics

The Museum of Lost Sound   **New York, Nov 2025**

- Designed a glanceable three-state interaction system by iterating on visual clarity through rapid prototyping with ESP32 and CircuitPython
- Collaborated on a complex hardware-software system, integrating sensors and displays to create an elegant, non-blocking state machine
- Designed and fabricated the micro-museum enclosure using Rhino and conductive PLA 3D printing

Camino de Santiago Board Game   **Guangzhou, China, May 2024 – Dec 2024**

- Scraped over 40,000 street-view images from Camino de Santiago and applied image segmentation techniques using machine learning and DPT ADE20K Python model to distinguish different landscape features
- Researched different travel experiences along Camino de Santiago by sentiment analysis and topic classification models applied to a 160,000-item Instagram dataset
- Developed a predictive model to analyze the relationship between environmental factors and traveler experiences along the route, using Random Forest
- Designed a board game to engage children in simulating pilgrimage, tourism, and hiking experiences

Sequential Collaborative Robotic Construction from 2D Patterns   **Guangzhou, China, Oct 2024 – Dec 2024**

- Designed and programmed tool to build bricks with angular variation range based on human instructions; a 12-unit slat-wall was assembled using a 4-axis Dobot Magician robotic arm
- Designed experiments testing two variables (workflow sequence and slat configuration) to analyze human-machine collaboration variance; conducted multiple rounds of testing to validate results for consistency
- Collected feedback from 4 participants on machine-assisted design, focusing on accuracy and creativity

Arduino-based Adaptive Tension Structure   **Beijing, China, Sep 2024 – Dec 2024**

- Reflected social interaction patterns in bending active structure based on Proxemics principle, mapped structure using skeleton

data tracking with MediaPipe framework
- Constructed a full-scale, dynamic tension structure (1.5m x 1.5m x 1.5m) capable of real-time shape adaptation, controlled by three Arduino-driven motors
- Prototyped responsive elasticity that tracked human posture shifts, using Arduino Uno and DYNAMIXEL Shield

2024 CDAC 3D Printed Bamboo Structure   **Shanghai, China, Nov 2024**
- Scanned dimensions of 66 bamboo pieces to design custom 3D-printed joints for precise assembly
- Printed joints and tested locking mechanisms for stability of each module, optimizing overall stability
- Assembled bamboo pieces with 312 3D-printed components to construct a 1.8-meter tall bamboo model
- Designed and fabricated a prototype for a hexagonal interlocking structure using 3D printing techniques

RESEARCH EXPERIENCE

Spatial Syntax Empirical Study   **Guangzhou, China, May 2024 – Jun 2024**
- Installed and engaged nine PYRO-Boxes people counting system to track foot traffic and collect data
- Cleaned SCUT campus road network data and analyzed spatial syntax metrics such as connectivity, depth, integration, and choice using depthmapX spatial analysis software
- Evaluated correlation between observed traffic patterns and spatial syntax predictions, comparing the spatial syntax model with real data to reveal its limitations for for high-purpose behaviors (e.g., commuting)

Urban Sustainability Research   **Guangzhou, China, Mar 2024 – Jun 2024**
- Conducted field research at 3 fertility clinics, interviewing 15 IVF patients and distributing 75 surveys to understand user experiences of IVF
- Identified three categories of spatial needs (public, medical, and rental spaces) unique to fertility centers; used an IPA model to highlight key mismatches in supply and demand
- Proposed specialized rental solutions and online service platforms to help governmental, social, and healthcare organizations close the gaps in spatial demand

Shaxi Ancient Town Historical Preservation Workshop   **Dali, China, Jun 2023 – Jul 2023**
- Scanned a 3D model of Sideng Street (280 m^2) using Agisoft Metashape, supported by drone and camera inputs
- Created a stop-motion animation titled *Ironic Shaxi* using Mental Canvas, Procreate, and Adobe Effects the illustrate the history of the street and potential future growth
- Generated commercialized street images using PromeAI to reflect on the impact of capital on spatial transformation and preservation

TEACHING EXPERIENCE

Kindergarten Assistant Teacher, Spatial Cognition Class   **Guangzhou, China, Nov 2024 - Present**
- Led weekly activities for 10 children, designing lessons that taught engineering and design (e.g., modeling wind-based power plants and designing ferris wheels); brought designs to life with 3D modeling using blocks
- Mentored 40+ children (ages 4-6) in basic construction, enhancing their 2D-to-3D spatial skills and creativity; prepared 10 sets of 3D-printed teaching aids to support hands-on learning
- Observed and recorded children's learning and progress, noting opportunities for further learning

LEADERSHIP EXPERIENCE

Head of Chinese Orchestra, SCUT   **Guangzhou, China, Jun 2022 – Jun 2023**
- Organized rehearsals and performance schedules for 31 orchestra members
- Managed orchestra budget, including filing invoices and expenses; raised 1,500 RMB in sponsorship funding, enabling two on-campus performances

Officer, Rights Department   **Guangzhou, China, Sep 2020 – Jun 2022**
Student Union, School of Architecture
- Drafted and wrote 3 posts, reaching an audience of 900 viewers
- Secured 2,000 RMB in sponsorship to cover routine expenses

Student Assistant, Archive Office   **Guangzhou, China, Jul 2023 – Dec 2023**
- Organized graduate archives, ensuring documentation was up to standards for school audits and was easily accessible by academic faculty

HONORS & AWARDS

WUPEN International Competition for Sustainable Urban Research Report - Top 15%	2024
Outstanding Student Leader, SCUT Arts Troupe	2022-2023
Merit Student, School of Architecture	2022-2023
Third Class Scholarship, SCUT - Top 30%	2021-2022
Outstanding Student Officer, School of Architecture Student Union	2021-2022