Yiwei Wang

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EDUCATION

University of Pennsylvania Remote (Shanghai)
Master of Computer and Information Technology GPA: 4.00/4.00 Jan 2025- Present
- Related Course: Introduction to Software Development, Mathematical Foundations of Computer Science

The Chinese University of Hong Kong (CUHK) Hong Kong, China
Master of Electronic Engineering Sep 2019- Nov 2020
- Related Courses: Advanced Perception for Intelligent Robotics; Wearable Bioelectronics; Building and deploying scalable machine learning services; Innovative technology and management in modern engineering; Engineering Economics; Machine learning based on signal processing; VLSI digital signal processing

University of Shanghai for Science and Technology (USST) Shanghai, China
Bachelor of Biomedical Engineering, GPA: 3.78/4.00, Rank: 8/173 Sep 2015- Nov 2019
- Related Courses: Biomedical Materials; Fundamentals of Mechanical manufacturing Technology; Design for Minimal Invasive Surgery; Analog/Digital Electronics Technology; Circuit Theory; Data Structure; Database Principles; Innovation and Entrepreneurship Project

Fudan University Shanghai, China
Graduate Minor of Finance Sep 2017- Jun 2019
- Related Cources: Financial Markets; Corporate Finance; Financial Engineering; Microeconomics; Macroeconomics

Harvard Graduate School of Design (GSD) Shanghai, China
Design Discovery Virtual Program Jun 2023- Jul 2023
- Individual Project: Urban design in Sham Shui Po integrating community insights and architectural strategies.

Cornell University Shanghai, China
Introduction to Architecture Program Jun 2024- Aug 2024
- Individual Project: Exploring the architectural concepts of space, form, function, and technology.

RESEARCH EXPERIENCE

Tongji University，College of Design and Innovation (CDI) Shanghai, China
Research Intern, CDI Center for Digital Innovation
Shoulder Compensation Monitoring & Rehabilitation Support System Jul 2025- Oct 2025
- Designed and assembled a custom ESP32 PCB for garment embedded textile strain sensors, enabling 16 channel communication with < 100 ms latency and ≥ 30 Hz channel refresh rate.
- Built clinician- and patient-facing UIs in Figma and shipped a web dashboard for live plots/report export.
- Led end-to-end tests with 10 participants（rehabilitation therapists and stroke patients), collecting data on forward reach, abduction, and overhead lift.

SwipeNodes Interactive Hardware Platform
- Led design and assembly of a compact ESP32 (BLE) PCB integrating a DC-DC power module, multi-channel capacitive touch electrodes, and an FPC connector, supporting both rigid and flexible form factors.
- Developed touch sampling threshold tables and a low pass filtering strategy for swipe experiments across phones, earbuds, and rings, to study how swipe gestures transfer between devices.

Research Intern (Remote), iDVX Lab Jan 2025- Sep 2025
AI Virtual Human Interaction & Technology Research
- Conducted a systematic review of 142 studies on embodied conversational agents (ECAs) across pain management, mental-health support, chronic-disease management, and health behavior change, and authored a paper.

International Research Workshop DigitalFUTURES 2025, Tongji University Shanghai, China
Participant, Industrial Ecologies Through Bio-integrated Design, under Professor Marcos Cruz and Jingyuan Meng June 2025- July 2025
- Designed mix ratios and pre-treatment experiments using calcium-carbonate filter mud (sugar-refining by-product), identifying an optimal CLS range of 0.48 to 0.55 g that lowered average shrinkage to about 45.8 percent, roughly 19 percent less than high-shrinkage mixes around 56 percent.
- Logged the effects of binder ratio, moisture content, and curing regime on printability and dimensional accuracy (e.g. A mix with 0.5 g CLS, 0.5 g xanthan gum, 1.71 g activated charcoal, 14.5 g Cab Mud, and 18.6 g water achieved about 45.8 percent shrinkage with less than 10 percent mass loss in extrusion tests.
- Fabricated a large-scale prototype using an Kuka robotic arm using Grasshopper-based robotic deposition pipeline for geometry modularization, path generation, and print-parameter coupling

International Research Workshop DigitalFUTURES 2024, Tongji University Taizhou, China
Participant, Al Design Creation Summer Innovation and Creation Camp, under Professor Yunsheng Su
June 2024- July2024
- Integrated intelligent prefabricated components with pneumatic prefabrication to construct a 1:1 full-scale structure, increasing prefabrication rate by 2%, customization rate by 15%, and reducing the human-machine ratio by 30%
- Developed pneumatic membrane components sprayed with polyurethane and concrete materials, reducing material

transportation weight and improving remote construction efficiency
- Simulated the robotic arm spraying path and performed structural analysis using Karamba, optimizing pneumatic membrane segmentation

Steel Fusion: Augmented Fabrication and Robotic Sculpting Workshop, XJTLU University Suzhou, China
Participant, under Professor Tutor: Soomeen Hahm July 2024- Aug 2024

- Computed toolpath planning algorithms in grasshopper Robim add-on for 5 chunks of flat and corner foams used for hot wire cutting, ensuring precise cutting of different complex surfaces while minimizing material waste
- Optimized the cutting path of the Kuka robotic arm, reducing collisions during the cutting process

International Research Workshop Digital Futures 2023, Tongji University Shanghai, China
Participant, Soft Concrete Workshop, under Professor Ye Zhang June 2023- July 2023

- Constructed a structure made of concrete, wire mesh, and fiberglass based on prestressed fabric concrete to reduce the need for scaffolding and support structures
- Applied the concept of minimal surfaces and adjusted the form with 9 control point units; conducted structural analysis (Karamba) to achieve aesthetically pleasing shapes and optimal stiffness of prestressed concrete

Future Laboratory, Tsinghua University Beijing, China
Research Assistant, Center for Perception and Consciousness Studies Oct 2023- Feb 2024

- Experimented with 5 participants' brainwaves and emotions using EPOC X EEG equipment.
- Mapped 6 categories of human emotions to corresponding pets' feedback, as a visualization of emotions monitored through EEG.

HCI-X Research Program Shanghai, China
Research Assistant, AI-Assisted Historical Fiction Writing Study, under Professor Ray LC May 2023- Sep 2023

- Completed the experiment of 20 novelists in AI writing tasks, analysing their level adaptation of generative AI in writing tasks using qualitative analysis

USST, Department of Biomedical Engineering Shanghai, China
Research Assistant, MicroPort Inspirational Innovation Fund Project May 2018- May 2019
Multi-platform postural health assistant based on image recognition

- Researched medical references and interviewed 10 doctors to establish eye-to-desk distance parameters
- trained a model of eye posture using collected desktop working photos, ensuring medical reliability
- Developed a cross-platform eye posture assistant program, including posture supervision mode, break reminder mode, and eye exercise tutorial mode.

Lumbar rehabilitation training and evaluation software system

- Collected data from individuals undergoing lower back rehabilitation to determine the range of stretching angles and distances for the rehabilitation device.
- Edited materials and created 3D models in Maya and Unity to simulate garden and park set.
- Conceptualized the functionality of the "collect coins" and "chase butterflies" in rehabilitation game, including lumbar and back function assessment, training, and reporting

PROFESSIONAL EXPERIENCE

Formal-Tech Co., Ltd. Shanghai, China
Senior Product Manager, Software-Defined Systems Division Nov 2025 – Present

- Conducted SMAVE(industrial control software) competitive analysis, benchmarking 11 domestic and international tools in code quality, formal verification, and industrial control use cases.
- Aligned planned SMAVE features with IEC 61508 / IEC 61131-3 and key compliance needs from automotive, rail transit, and general industrial customers.
- Led cross-functional collaboration between R&D, QA, and sales to design the first 5 functional modules of the new release.

Z-ONE Technology Co., Ltd. Shanghai, China
Product Manager, Cloud Platform Department Jan 2022-Now

- Developed and deployed a network security TARA (Threat Analysis and Risk Assessment) methodology for the company's automotive system development process, facilitating cybersecurity strategy design, streamlining security protocols, and enhancing risk mitigation processes
- Initiated data classification and grading process for Vehicle Data Collection Management product, completing the collection and submission of 100+ categories of data from 15+ downstream departments and stakeholders.
- Represented the company as the lead drafting group for the national mandatory industry standard "Data Security Management System for Intelligent Connected Vehicles," leading and participating in discussions and writing efforts with various industry companies

Shanghai Trusted Industrial Control Platform Co., Ltd. Shanghai, China
Product Engineer, Research and Development Center Jan 2022- Jan 2021

- Led the second phase of the Information Security Testing Tool Platform development
- Created and led the product roadmap for the Automotive Driver Emotion Detection System and Intelligent Cargo Measurement System for Trucks

- Conducted research on input/output data and critical security elements for water conservancy industry and managed both internal and external data assets of 80+categories.

Philips (China) Investment Co., Ltd. Shanghai, China
Clinical Application Intern, Clinical Application Marketing Department Jul 2017– Aug 2017

- Investigated 168 users and sales representatives on product improvement and conducted market research on Philips clinical medical products, resulting in an 8% improvement in sales

ADDITIONAL INVOLVEMENT

eCAADe 2024 Workshop Shanghai, China
Cooperative Robotic Assembly of Spatial Timber Systems: Simulation and Robot Programming Jul 2017– Aug 2017

- Explore cooperative robotic assemblies utilizing Robots in grasshopper to create a timber construction

Exploring Building Topology Through Graph Machine Learning

- Generated graph representations from 3D building plan models using TopologicPy and TopologicGH, enabling architecture and design professionals to quickly analyze properties and classify plan types for rapid production.

Acadia Habits of the Anthropocene Workshops Shanghai, China
Task and Motion Planning for Robotic Assembly Oct 2023– Oct 2023

- Planning trajectory using scripts written in Python using compas and compas_fab to assembly a wood stacking structure remotely 6R ABB GoFa robot in HKU

GSD Executive Education

- A.I., Machine Learning, and the Built Environment: Fundamentals and Proptech Applications, Shanghai, Jan 2024 - Jan 2024

The 2024 SJTU SDG July Camp
Low-carbon Buildings and Cities Shanghai, Sep 2017 - Jan 2019

VOLUNTEER WORK

USST International Affairs Shanghai, China
Volunteer at the Nordic Culture Center Sep 2017 - Jan 2018

- Organized 3 evening events and activities for over 120 people
- Coordinated 4 Nordic cultural discussion forums with international students
- Designed 6 promotional posters and assisted with 2 language training courses for # exchange students

AWARDS AND HONOR

Special Scholarship for Msc in Electronic Engineering
Awarded Top 20% students, given by CUHK

Distinguished University Graduate, 2019
Awarded Top 5% students given by USST

Outstanding Graduation Project 2019
Awarded by USST in recognition of exceptional project achievement

Outstanding Student of the University 2018
Awarded Top 2% students in recognition of the outstanding achievement in academic and social activities, given by USST

The Second Prize Scholarship of Academic Excellence of year 2016, year 2017, year 2018
Awarded Top 10% students, annually given by USST

INVENTIONS & PUBLICATIONS

Publication:

Wang, Y., Zhang, Y., & Wang, Y. (2026, March 18 – 19). Human-robot collaborative brick-layering based on decision tree and context-aware visual workplace [Abstract under review]. AI in AEC 2026, Helsinki, Finland.

Jiang, Z., Jian, M., Zhang, J., & **Wang, Y**. (2025). SwipeNodes: Exploring swipe navigations of long voice message interaction via keypoint summary. Manuscript submitted for publication to the Proceedings of the 2026 CHI Conference on Human Factors in Computing Systems

Wang, Y., & Duan, H. (2024). An adaptive system for pneumatic membrane robotic arm spraying construction (Manuscript submitted for publication).

Wen, Y., **Wang, Y**., Yi, K., Ke, J., & Shen, Y. (2024). DiffImpute: Tabular data imputation with denoising diffusion probabilistic model. In Proceedings of the International Conference on Machine Learning (ICML) 2024 (in press)

Wang, Y., Chen, Y., Zhang, F., Li, J. X., & LC, R. (2024). Once More with (the right) Feeling: Creating Characters, Plot Outlines, and Accurate Contexts for Historical Novel Writing with Generative AI

Invention (Based on product):

An automated network security risk assessment method based on vulnerability attack model. China Patent Application No.

Wang, Y., Z-ONE Technology Co., Ltd. (2023). An automated network security risk assessment method based on vulnerability attack model (China Patent Application CN116846619A)

Software Copyright (Based on research project):

Wang, Y., Sun, Y., Lan, S., Wei, Y., Zhao, S., & Yang, Y., University of Shanghai for Science and Technology. (2019). Software for fun training in spinal rehabilitation based on lumbar and back movement (Software Copyright Registration No. 2019SR0432682)

Unpublished Paper: “Photo Taking Game: A Bayesian Framework for Modeling Photographer Positioning Choices in Simulated Buildings”

SKILLS & SOFTWARES

Programming Language:
Python, Java, HTML, JavaScript, Arduino, C, C#, SQL
Design Prototyping:
Figma, Axure, Sketch, Miro
3D Modeling:
AutoCAD, SketchUp, Rhino 3D (Grasshopper)
Digital Simulation:
Ladybug, Karamba structural analysis, Abaqus finite element analysis
Rendering and Visualization:
Lumion, Enscape, Photoshop, InDesign, Illustrator, Lightroom, Premier Pro
Languages: Mandarin (native), English (proficient).