# RUI ZHANG

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## Education

**Beihang University** *Beijing , China*

**Master of Design** | GPA:3.83/4.00, Top 10% *Sept. 2020 - Jun. 2023*

- Distinguished Graduate, Xiaomi First Level Scholarship (Top 1%), 3-year Second Level Scholarship, etc.
- Courses : Design Thinking and Methodology, Design Style and Art Expression, Interdisciplinary Experimental Art, etc.

**Heilongjiang University** *Harbin , China*

**Bachelor of Physics** | GPA:3.24/4.00, Top 30% *Sept. 2013 - Jun. 2017*

- National Inspirational Scholarship, Second Level Scholarship, First Prize in Mathematical Modeling Competition, etc.
- Courses : Advanced Mathematics, Advanced Language Program Design, Methods of Mathematical Physics, Modern Physics Experiments, etc.

## Professional Experience

**Art and Machine Creativity, Hong Kong University of Science and Technology** *Hong Kong , China*

**Project Leader, LLM-Driven Interaction Innovation Research (Supervisor: Prof. Anyi Rao)** *Jul. 2024 - Present*

- As the first author, the paper ***Mindalogue: LLM-Powered Nonlinear Interaction for Effective Learning and Task Exploration*** is being revised and will be submitted to UIST 2025. We designed an innovative prototype "Mindalogue" that leverages Large Language Model(ChatGPT-4o model) to provide nonlinear interaction and presents the results in a structured mindmap format.

**The Future Laboratory, Tsinghua University** *Beijing , China*

**Research Assistant, Future Products Design Based on AI Era (Supervisor: Prof. Yang Jiao)** *Oct. 2023 - Oct. 2024*

- Focusing on the innovation of product for the next 3-5 years, this project aims to develop new products that meet the future market demand. The project encompasses multiple application scenarios, including sports health, audio-visual entertainment, smart work, traffic travel, and smart home, with a core focus on the integration and innovation of AI technology and products.
- Conducted in-depth research and authored a report on future terminal development trends, leveraging insights into AI technology, market trends, and comprehensive product experiences.
- Proposed emotionally intelligent design solutions for AI agents, utilizing methodologies such as literature review and focus group discussions.

**Research Assistant, Haptic Feedback Design of Smartphones (Supervisor: Prof. Yang Jiao)** *Nov. 2022 - Present*

- Collaborated with a eight-person team to develop a new vibration system on smartphone that utilised present mobile devices' haptic perception as a foundation to create a breathtakingly natural tactile interactive experience.
- Automated and optimised the data handling process for user experiments, working with PyCharm 2023.2 did scripting, employed Android Debug Bridge to communicate with mobile devices, and design new waveform.
- As the first author, the paper ***SemanticTap: A Haptic Toolkit for Vibration Semantic Design of Smartphone*** was accepted to ACM International Conference on Multimodal Interaction(ICMI 2024). We established the relationship between objective physical parameters and subjective hapics perception on smartphones, and developed a haptic toolkit for designers to design tactile waveform by semantic approach.
- As the co-first author, one paper ***HapticMetric: A Smartphone Haptic Experience Computing System*** was accepted to the Chinese CHI 2024. In this paper, we present a haptic experience description system with 17 pairs of subjective adjective organized into 5 factors based on smartphones that enhances the understanding of haptic experiences for both users and designers.
- As the first author, the paper ***Optimization Design of Smartphone Vibration Feedback by Integrating Vibration and Semantic Features*** (Chinese) is writing to one of A+ level top proceedings of computer science in China: the Journal of Computer-Aided Design & Computer Graphics. This paper presents an optimization algorithm for haptic feedback that combines vibration and semantic features, based on real smartphone vibration scenarios and user perceptions.

## Research Experience

**Gamification Design for the Winter Olympics** *Beijing , China*

**Student Leader** *Sept. 2021 - Oct. 2021*

- Developed the overall framework for the mystery box gameplay, designed the content creation mechanism, and established a system for exchanging virtual digital points for physical mystery boxes.
- Designed a Winter Olympics gamification concept product, it concept transformed 14 selected Winter Olympics sports movements into dance moves, combined with disco music for choreographed dances, formed the content of the mystery boxes.
- Achieved the Excellence Award in the Team Category at the "2021 Design Day".

**2050 Humble Administrator's Garden Tourism Experience Design** *Beijing , China*

**Project Leader, Tsinghua University & Carnegie Mellon University Course Project** *Jul. 2021 - Aug. 2021*

- Focused on researching the scenario of Suzhou's Humble Administrator's Garden tourism in 2050, designed a AR conceptual system with 3 characters and personalities, providing visitors with comprehensive companionship, to enhance users' experience from an emotional perspective.
- Conducted user interviews to identify pain points, created personas, mapped user journeys, and established a product framework.
- Achieved the second prize in the final group evaluation.

**An Interactive System to Popularize the Dispersion Principle of Light** *Beijing , China*

**Project Leader , Course Project** *Apr. 2021 - Sept. 2021*

- Developed an audio-visual installation for an art gallery to demonstrate the scientific principles of light dispersion in Impressionist art.
- Took charge of the preliminary research and schematic design, proposed innovative ideas of the research plan.
- Primarily responsible for the selection of combining prism, hardware circuit design and chaining implementation.

**Medical Experience Design for Diabetes Clinic Based on Service Design Thinking** *Beijing , China*

**Core Member** *Jan. 2020 - Feb. 2020*

- With the expansion of clinic space by five times after relocation, capable of caring for 10 thousands of diabetes patients, explored ways to provide a better end-to-end medical experience.
- Conducted interviews with 2 doctors, 4 health educators, 1 patient navigator, and 15 patients. Employed tools such as user personas, ATONE method, stakeholder analysis, and service blueprints to analyze and identify user pain points and design directions.
- Planned the layout of the new clinic area, including functional zones, patient flow, space, visual identity system and interior design. Simultaneously resigned and updated existing software.

## Work Experience

**DiDi** *Beijing,China*

**Intern , Product Manager , Enterprise Service Group** *May. 2022 - Oct. 2022*

- Managed the development over 20 functions of several products, designed products by discovering user needs and market investigation (e.g. operational toolbar and data monitoring on sales platform), R&D, online experiment, revision and launch.
- Analyzed website traffic data to formulate growth strategies tailored to different customers, enhanced user retention and conversion rates.
- Coordinated across departments including marketing, operations, design, and development teams to ensure product releases timely.

**Lenovo** *Beijing,China*

**Intern , Product Manager , Global Voice Group** *Nov. 2021 - Mar. 2022*

- Designed questionnaires for voice memo product, analyzed over 1000 collected responses, and proposed new product recommendations based on these data and extra market analysis.
- Conducted data selection and manual recognition of voice data, compared product conversion outcomes, identified and categorized erroneous data, presented solutions to enhance accuracy in voice-to-text transcription systematically.

## Campus Activities

**Beihang University Graduate Union** *Beijing,China*

**Vice Minister, Employment Practice Department** *Dec. 2020 - Dec. 2021*

- Organized 10+ employment-related competitions and lectures, including Internship Interview Competition and Mock Interview Contest.
- Established and managed three WeChat groups for event activities, each with over 200 members.
- Led the publicity team, managing task allocation, material review, and producing 20+ promotional sets.

## Service

**Academic Conference Paper Review** *2023 - Present*

- Chinese CHI Conference 2023, 2024
- Eurohaptics Conference 2024

## Skills

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| **Professional Qualification** | Assistant Engineer, Computer Technology and Application. |
| **Programming** | Python , MATLAB , LaTeX , C , JAVA , HTML . |
| **Machine Learning** | Linear Regression, Principal Component Analysis. |
| **Data Analysis** | Correlation Analysis, Exploratory Factor Analysis, Confirmatory Factory Analysis, Structural Equation Model. |
| **Qualitative Analysis** | Thematic Analysis, Reflexive Thematic Analysis. |
| **Design and others** | Adobe Photoshop, Adobe Illustrator, Touchdesigner, Figma , Sketch , C4D , Axure , MAXQDA, Xmind, etc. |
| **Soft Skills** | Data Mining, Project Management, Teamwork, Problem-solving, Documentation, Engaging Presentation. |

## Languages

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| **English** | Professional proficiency |
| **Chinese** | Native proficiency |