

Lian Wanchen

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## Education Background

Hong Kong University of Science and Technology   Mphil   Artificial Intelligence	2024.9-2026.6
Hokkaido University   Exchange   Exercise rehabilitation for older people	2024.7-2024.9
Beijing Normal University   Bachelor   Chinese Language and Literature	2020.9-2024.6
Tsinghua High School	2017.9-2020.6

## Project experience

**"HipGo"** FullStack Development 2024.12–now

(Mobile WeChat Intervention for Personalized Post-Operative PAO Care)

### Project Overview:

This project addresses the limitations of current post-PAO protocols by exploring a mobile WeChat intervention to deliver personalized, integrated support across the care continuum, focusing on pain management, mobility, and psychological well-being.

### Technical Implementation:

Implemented an interactive pain module using SVG body maps and Tencent AI for touch/voice input (Delta Encoding for <18KB/record). Developed a rule-based decision support engine with 28 clinical pathways encoded in JSON Schema and WeChat Cloud Functions ( $\leq 1.2s$  response). Designed an adaptive rehabilitation management system driven by patient compliance data.

### Clinical Validation:

Currently undergoing clinical trials at the First Affiliated Hospital of Guangzhou University of Chinese Medicine to evaluate the impact of HipGo on patient-reported outcomes, treatment adherence, and overall recovery.

**Shadows of Recognition** Lead Researcher 2024.9–now

(Augmenting Episodic Memory & Social Connection in Aging via Adaptive, Agent-Mediated HCI)

### Project Goals:

Current HCI interventions for age-related cognitive decline often lack personalized adaptation and fail to address the critical link between episodic memory and social engagement. This project explores the potential of an agent-mediated system to augment both, leveraging a memory album paradigm and eye-tracking-guided training.

### Technical Components:

Integrated a searchable "memory album" (user-uploaded photos with face-api.js for local face recognition), an adaptive agent providing personalized training schedules, and an eye-tracking module that guides attention to salient facial features into a WeChat Mini Program. Implemented FIE-based training with CNN transfer learning to enhance recognition flexibility.

### Cognitive and Neural Assessment:

Conducting a longitudinal study employing cognitive (TICS) and affective (GDS-15, UCLA Loneliness Scale) measures to assess changes in memory performance and social connectedness. Multimodal MRI data will provide insights into the neural correlates of training-induced plasticity.

**Multimodal Sleep Monitoring SystemEarbud** Contributing Researcher 2024.8–now

(Based Sleep Onset Detection for Automated Music Control)

### Project Overview:

Designed and implemented an intelligent earbud system that leverages multimodal sensor data (acoustic, PPG, IMU) for automated sleep onset detection and music control. Aimed to enhance the accuracy and user experience of consumer-grade sleep monitoring devices.

### Technical Contributions:

Pioneered multimodal sensor fusion (IMU+PPG+Audio: 49.75% accuracy) and a 12-layer U-Net for sleep stage analysis. Enabled continuous 8-hour data analysis, boosting REM recognition by 39% (128-min window) through novel accelerometer/PPG signal processing.

### Key Achievements:

Developed and implemented a multimodal sleep onset detection algorithm and a deep learning-based sleep stage analysis model, significantly improving consumer sleep tracker performance.

**Bookdone** Contributing Researcher 2024.7-2024.11

(Cognitive Knowledge Graph Learning System)

Project Overview: Addresses gaps in cognitive science by using AI knowledge graphs to optimize personalized learning.

Technical Implementation: Employs an AI pipeline integrating NLP for knowledge extraction, cognitive models for brain-aligned structuring, and knowledge representation for personalized knowledge graphs.

Key Innovations & Outcomes: An adaptive AI engine customizes content and feedback using machine learning. A multi-agent system orchestrates knowledge extraction, content generation, and adaptive feedback.

## Work Experience

**HiDream.ai (Shanghai,China)**

AI Product Manager Intern

2024.6-2024.9

### Model Optimization:

Utilized deep learning frameworks in PyTorch to train generative models for the localized cross-border e-commerce product HiDream. Integrated text, image, and video data for multimodal data fusion.

Improved image generation quality, video smoothness, model comprehension, and content accuracy.

### User Growth:

Designed and integrated AI redrawing, similarity drawing, and de-noising features through user demand research.

Achieved daily active creation user growth of 19,00+/month. Optimized content display formats and validated market strategies using A/B testing. Increased user browsing time by 25% year-on-year and 30-day user retention rate by 38.8%.

**ByteDance (Shanghai,China)**

Algorithm Product Manager Intern

2024.3-2024.6

### Algorithm Optimization:

Served the 3C category using Naive Bayes models and multivariate regression analysis for dynamic pricing strategy optimization. Monitored real-time user behavior data (e.g., purchase history, browsing patterns).

Identified key drivers of promotional activities through data mining techniques.

Achieved a 76% increase in average daily ROI for brands.

### User Growth:

Collaborated with 38 top merchants. Developed user profiles using K-means clustering analysis and machine learning algorithms to identify potential high-value user groups.

Designed and implemented a personalized recommendation system, increasing conversion rates by 35% and driving brand sales growth. Continuously iterated operational strategies through user feedback and behavioral data analysis.

**ByteDance (Shanghai,China)**

Business Analysis Intern

2023.12-2024.3

### Data Visualization:

Developed B-end fee rate strategies for the 3C digital category.

Utilized regression analysis, time series forecasting, and decision tree models to analyze merchant operations, dynamic sales, and GMV share. Provided timely improvement suggestions.

Identified sales pain points through predictive modeling, resulting in a 60% year-on-year decrease in high-rate fees.

### User Research:

Combined qualitative (industry reports, macro/meso-level enterprise research) and quantitative research methods (user interviews, surveys) to collect user feedback and understand customer needs.

Built dynamic data dashboards using Aeolus, Power BI, and Tableau for real-time sales metric monitoring.

Drove a 413% year-on-year GMV growth for related brands.

**Little Voice (Shanghai,China)**

User Operations Intern

2023.9-2024.12

### Flow Matrix :

Build a diversified flow matrix through Xiaohongshu&Tictok live broadcasting, develop standardized user activation SOPs, effectively guide flow to private domains to improve user retention rate by 30%.

### User Growth :

Plan IP positioning, build SOP for course selling and paid consultation, optimize content strategy through A/B testing, optimize user experience, achieve user growth of 10% per month and turnover of 8w+.

**Yukuaidi (Shanghai,China)**

Brand Creative Intern

2023.9-2024.12

### Brand planning :

Responsible for the China social media of luxury women's clothing *Loro Piana*, 3C audio *Devialet* and perfume brand *Caron*, successfully output 200+ content with an average readership of 20,000+.

*Holiday marketing :* Based on market research and analysis, planning the Chinese New Year marketing campaigns for *Versace* and *Helena Rubinstein*, achieving a 30% increase in brand awareness and a 25% increase in user engagement.

### Placement Optimization :

Analyzed client *Devialet*'s monthly social media data and collaborated on the brand's content operation strategy for 2024, resulting in a 40% increase in social media interaction rate.

**Bluefocus (Beijing,China)**

Marketing Intern

2023.5-2024.9

### Content Planning :

Develop and implement content strategy on dual micro-platforms for luxury agent *Yingtong Group* (covering 50+ brands such as *Van Cleef & Arpels*, *Versace*, *Coach*, etc.), boost content readership by 3k+.

### Placement optimization:

Monitor the effect of advertisement placement, analyze key indicators, through data-driven strategy adjustment, the average monthly exposure reached 80k+ times, exceeding target achievement rate by 130%.