

Education Background

Hong Kong University of Science and Technology  Mphil  Artificial Intelligence	2024.9-2026.6
Beijing Normal University   Bachelor   Chinese Language and Literature (985/A+/gpa 3.5/30%)	2020.9-2024.6
The Santa Fe Institute   Visiting scholar   Complexity Research	2025.7-2025.9
Hokkaido University   Exchange   Exercise rehabilitation for older people (A+)	2024.7-2024.9
Tsinghua High School   STEM (13.4%)	2017.9-2020.6

Research Interest

Human-centered HCI/HRI; affective computing; caring, trust-rich interactions for robots, empathic design.  
GNNs for multimodal health/knowledge; RNA-multimodal maps; gait fusion; interpretable, precision decisions.  
Concept-graph activation for creative ideation via wordplay, linguistic riddles, brand strategy.  
Socio-technical systems in generative AI; cultural analysis; identity transformation; inclusive, ethics-aligned design.

Publications

"Ambiguity-Driven Guidance: How Designing for Productive Confusion Reactivates Teacher Value"

*When ChatGPT writes essays in seconds, language teachers face extinction—unless AI becomes their ally, not replacement.*  
First Author[code] Under Review at CHI 2026 Workshop 2025.5–2025.9  
*Research Problem:*  
Identified fundamental mismatch between generative AI's efficiency-driven design and teaching's essence of guided inquiry; developed "ambiguity-driven guidance" principle transforming AI from answer-machine to cognitive catalyst  
*Technical Execution:*  
Built BGE-M3 + GAT architecture generating dynamic concept networks; programmed progressive questioning interfaces; executed 5-week controlled study with 18 participants across multiple institutions  
*Measurable Impact:*  
Achieved statistically significant professional identity shifts; documented sustained engagement with 122.8 concept-construction steps per session, validating AI's potential as teaching enhancer

"Generative AI Reshaping Technical Identity:  
A Study of Digital Career Transition Practices Among Chinese Liberal Arts Women"

*Transforming "non-technical" outsiders into innovative collaborators who infuse humanism into code.*  
First Author[Visitor] Under Review at ICWSM 2026 2025.5–2025.9  
*Research Innovation:*  
Investigated how generative AI transforms technical identity among through a mixed-method qualitative study  
*Methodology:*  
Conducted multi-source qualitative study with 10 participants through 1.5-2 hour in-depth interviews; executed digital ethnography across Douban&Rednott; achieved high reliability through dual researcher thematic analysis  
*Findings:*  
Discovered a multi-level identity negotiation model and "cautious activism" strategy facilitating career transitions and inclusive AI tool design; documented systematic identity transformation from "learner" to "technical person"

"Nef-Net+: Adapting Electrocardio Panorama in the wild"

Fourth Author Under Review at ICLR 2026 2025.5–2025.9  
*Research Problem:*  
Standard multi-lead ECG limits diagnostic views for conditions like Brugada syndrome; extends Electrocardio Panorama and Nef-Net for robust, arbitrary-view synthesis under in-the-wild constraints.  
*Technical Execution:*  
Builds direct view transformation architecture with offline pretraining, device calibration, and patient-specific adaptation to enable arbitrary-length, cross-device ECG generation.  
*Measurable Impact:*  
Demonstrates consistent improvements and establishes a panoramic ECG benchmark for rigorous evaluation.

"TBC-DDH: Inverse Inference of Preoperative DDH Pathology from Postoperative Gait Rehabilitation Data"

*What if we could diagnose tomorrow's hip problems by analyzing today's walking patterns?*  
First Author[code] Under Review at BIBM 2026 Workshop 2025.3–2025.7  
*Research Problem:*  
Tackled adult DDH diagnosis where preoperative imaging is limited and symptoms are hidden;

Created AI system that reads post-surgical walking patterns to reveal what hip problems existed before surgery

**Technical Approach:**

Built four-module AI architecture analyzing gait biomechanics across 29 post-surgery patients;

Tracked rehabilitation data from 31-210 days post-surgery to extract diagnostic signatures

**Clinical Impact:**

Achieved 86.67% accuracy in retrospective DDH diagnosis—significantly outperforming standard methods ( $p < 0.001$ );

Validated that walking patterns contain diagnostic information invisible to traditional imaging

**"HipGo: Multimodal Smart Agent Solution for Remote Hip Dysplasia Care"**

*Rare hip disorders affect 3% globally but lack specialist access—can smartphone-based AI close this gap?*

First Author[code]

Under Review at BIBM 2026 Workshop

2025.1–2025.5

**Research Problem:**

Tackled DDH's diagnostic desert—adults with undetected childhood hip disorders lacking specialist access in resource-limited regions; built AI platform democratizing expert-level orthopedic assessment

**Technical Approach:**

Deployed hybrid CNN-GAT for hip keypoint detection; fused visual features with clinical parameters for automated multimodal reports; integrated decision support with remote rehabilitation workflows

**Clinical Impact:**

Achieved closed-loop care from diagnosis to recovery; validated smartphone-accessible specialist-quality assessment, potentially reaching millions currently underserved by orthopedic expertise

## Research Experience

**"OmniBio-KG: Unified Multimodal Knowledge Graph for Intelligent Biomedical Reasoning"**

First Author[code]

Under Review at BIBM 2026 Workshop

2025.9–now

**Research Problem:**

Fragmented identifiers, hidden relations, and brittle inference block discovery; a unified biomedical knowledge graph can integrate heterogeneous entities and relations with semantics to support robust reasoning and discovery.

**Technical Approach:**

Build a heterogeneous KG with multimodal node attributes; integrate PPI/PSI/RPI edges with provenance and calibrated confidence; align to GO/KEGG/ChEBI; deliver L1–L6 from normalization and evidence scoring to path queries, link prediction, and function inference.

**Clinical Impact:**

Evidence-ranked, ontology-aware queries and actionable subgraph explanations accelerate target discovery and mechanism elucidation while improving trust and reproducibility.

**"Care-Centered HRI: Belief-Aware, Humanistic Emotion Computing for Home Robots"**

*When social robots enter family spaces, care requires trust, dignity, and cultural sensitivity.*

First Author[code]

Under Review at BIBM 2026 Workshop

2025.9–now

**Research Problem:**

Exposed the gap between utility-centric automation and care ethics in home contexts; defined belief-aware user state, human factors constraints, and privacy-first sensing as foundations for compassionate interaction.

**Technical Execution:**

Human factors engineering analysis, structured interviews, and interaction experiment design; multimodal affect recognition across vision/speech/touch with edge-first fusion; coordinated motion/voice/light/tactile policies, consent-aware proxemics, SDK scenario APIs for reliable deployment.

**Validation and Impact:**

Wizard-of-Oz and hallway studies feeding feature iteration; home-like pilots to assess trust, perceived dignity, and safe handover behaviors; commercialization path scoped across home, eldercare, and education.

**"Metapher As Semantic Encryption"**

First Author[code]

2025.3–2025.6

**Research Problem:**

Metaphors recast sensitive data as natural ciphertext, weaving ambiguity into each phrase to conceal meaning in plain sight while preserving poetic expressiveness.

**Technical Execution:**

Developed a dual-space embedding that translates literal concepts into metaphorical vectors; devised an adversarial training regimen balancing semantic fidelity (87% retention) and privacy defense (92% protection); implemented a context-aware transformation engine enabling controllable abstraction levels and reversible semantic ciphers.

**Measurable Impact:**

Introduced novel metrics uniting linguistic aesthetics with cryptographic rigor; achieved 78% cross-cultural coherence in interpretation studies; demonstrated secure, "readable privacy" in healthcare and creative writing scenarios through metaphorical obfuscation.



# Work Experience

Yulingzhikong (Canton,China)	Human-Robot Interaction Intern	2025.4-now
<i>Human factors-driven HRI design:</i> human factors engineering analysis, structured user interviews, interaction experiment design; translate multimodal affective computing requirements into interaction flows, feedback policies, latency budgets, privacy constraints; align edge-cloud deployment and modular hardware interfaces for reliable home use.		
<i>Product iteration and commercialization:</i> drive feature iteration from prototype to pilot with tactile end-effectors and SDK APIs; run scenario validation across home/eldercare/education, codify go-to-market hypotheses, partnership readiness, monetization checkpoints.		
HiDream.ai (Shanghai,China)	Product Growth Intern	2024.6-2024.9
<i>User Growth:</i> Launched AI redrawing and similarity matching features post competitive analysis. Drove 19,000+ monthly active creator acquisition through feature integration. Executed A/B testing framework validating content display optimizations. Delivered 25% YoY browsing time increase, 38.8% retention improvement		
<i>Business Analysis:</i> Analyzed competitor pricing strategies across 8 AI creative platforms using web scraping tools. Collected user feedback from 500+ surveys identifying top pain points in content generation workflow. Built Excel dashboards tracking daily user engagement metrics (session duration, feature adoption rates).		
ByteDance (Shanghai,China)	E-commerce Product Intern	2023.12-2024.6
<i>Product Optimization:</i> Served the 3C category using Naive Bayes models and multivariate regression 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. Achieved a 76% increase in average daily ROI for brands		
<i>User Growth:</i> Collaborated with 38 top merchants, using clustering 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		
<i>Data Visualization:</i> 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		
<i>User Research:</i> 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		
Yukuaidi (Shanghai,China)	Brand Creative Intern	2023.9-2024.12
<i>Brand planning :</i> 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+ 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		
<i>Placement Optimization :</i> 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
<i>Content Planning :</i> 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+		
<i>Placement optimization:</i> 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%		

## Other

### Content Creator

Douban: 1.6K+ followers, 400K+ readership, 300K peak engagement | Bilibili: 150K+ views Japanese music content  
Free Career consulting: 50+ women served