

Jingquan (Renny) LI

+ (1) 415-791-5536 – jingquanli@ucmerced.edu – rennyli.github.io – CA, USA

RESEARCH INTERESTS

Human-Computer Interaction (HCI), Brain-Computer Interfaces (BCI), Eye-tracking, Machine Learning, Artificial Intelligence

EDUCATIONAL BACKGROUND

University of California, Merced

Ph.D. in Electrical Engineering and Computer Science (EECS)

Advisor: Prof. Ahmed Sabbir Arif, Inclusive Interaction Lab

Merced, CA, USA

08/2025 – Present

The Chinese University of Hong Kong, Shenzhen (CUHK-Shenzhen)

Bachelor of Engineering in Computer Science and Engineering

* Took two gap years between the third and fourth year of study for personal and academic growth.

Shenzhen, China

09/2019 – 07/2025

Notable Courses: Computational Laboratory, Machine Learning, Digital Logic and Systems, Database System, Linear Algebra, Operating Systems, Programming Methodology, Probability and Statistics, Discrete Mathematics, Cloud Computing, Data Structures, Biology, Software Engineering, Parallel Programming, Computer Networks.

PUBLICATIONS & PRESENTATIONS

[1] X. Cao, **J. Li (co-first author)**, F. Meng, B. Yang, Y. Zou. “Enhancing cross-domain protein and peptide interaction with retrained deep learning models”, 2025. [Paper] [GitHub]

[2] C. Liang, **J. Li (co-first author)**, M. Li, P. An. “GenMemo: Exploring Narrative Chaining Visual Mnemonics to Support Memorization of Structured Proposition Texts”, 2025. (Submitted to CHI 2026)

[3] **J. Li**, X. Cao. “PASIR: A Proactive Social Interaction Robot Empowered by Multimodal Data Fusion and BCI-Driven Emotion Prediction Models”. 2024 International Conference on Social Robotics (ICSR). (Oral Presentation)

RESEARCH EXPERIENCE

EEG Signal Processing and Deep Learning for Auditory Neuroscience

CUHKSZ – Cross-modal Cognitive Computing (C3) Lab, Supervisor: Prof. Haizhou LI

Shenzhen, China

01/2024 – 07/2025

- Auditory Spatial Attention Survey: Co-authored a review of EEG/MEG/fMRI/ECOG studies, benchmarking deep models (CNN, attention, GNN) on public datasets and releasing an open-source tutorial.
- Emotional & Semantic Entropy: Designed an EEG dichotic listening study (N=30) using LLM-based semantic entropy and emotion corpora, analyzing alpha-band lateralization and TRFs for attention markers.
- EEG Music Emotion Recognition (ICASSP 2025): Applied mixup augmentation (99.6% subject decoding) and built a hierarchical valence-arousal model, achieving 48.5% accuracy in four-class classification.

AIGC-Driven Approaches for Memory Assistance and Human-AI Interaction

Southern University of Science & Technology, Supervisor: Prof. Pengcheng AN

Shenzhen, China

02/2024 – 08/2025

- Developed GenMemo, a generative AI pipeline that converts abstract texts into visual mnemonics via narrative chaining.
- Conducted a controlled study (N=69) comparing text, imagination, and AI-generated visuals, revealing significant gains in immediate and delayed recall.
- Ran co-design workshops to refine AI-generated video/image cues for memory augmentation.
- Co-first author, paper under review at CHI 2026.

Language-Aware Transformer-Mamba Model for Esophageal Cancer Segmentation

Shenzhen Research Institute of Big Data, Supervisor: Prof. Xiang WAN

Shenzhen, China

05/2024 – 05/2025

- Built LATM-ECS, a Transformer-Mamba framework aligning CT imaging with clinical text for esophageal cancer segmentation.
- Designed a multimodal loss (Dice, CE, cosine, edge-aware) to handle class imbalance and improve tumor boundary precision.
- Curated an expert-annotated multimodal dataset and validated the model’s robustness against noise and domain shifts.

Protein Interaction Prediction: Deep Learning Benchmarking and Visualization

Shenzhen, China

Shenzhen University of Advanced Technology, Supervisor: Prof. Gang CAO

05/2024 – 01/2025

- Curated datasets (STRING, UniProt, AlphaFold) and re-trained GNNs on short proteins, improving accuracy/F1 by 15-20% with half the training time.
- Applied models to FDA-approved peptide drugs and SARS-CoV-2 proteins, identifying new therapeutic targets and off-target effects.
- Published as co-first author in Briefings in Bioinformatics (2025): "Enhancing Cross-Domain Protein and Peptide Interaction with Re-trained Deep Learning Models"

INTERNSHIP

Search Technology Center Asia (STCA), Microsoft

Beijing, China

Technical Product Manager – Supervisor: Xinwei NIE

07/2022 – 12/2022

- Analyzed browser extensions, applying ML to improve Bing translation plugins and guide product design.
- Optimized Bing/Windows search UI with predictive modeling and NLP-driven typing predictions.
- Enhanced World Cup search results via cross-team data collaboration, refining algorithms for accuracy and engagement.

Feishu, ByteDance

Guangzhou, China

Technical User Operations – Supervisor: Zhuoyan LONG

12/2022 – 06/2023

- Diagnosed recurring issues in recruitment, payroll, OKR, and admin systems, proposing fixes to improve stability and UX.
- Analyzed 300+ feedback items for Feishu Recruitment, driving 100 feature requests through R&D reviews.
- Authored HR/payroll documentation and managed on-call support to enhance adoption and efficiency.

WeiXin Group (WXG), Tencent

Guangzhou, China

Content Operations – Supervisor: Lin LIN

03/2022 – 06/2022

- Processed and analyzed livestream host data to ensure quality classification and reliable performance metrics.
- Planned & launched campaigns (New Professions - Travel Storytelling), onboarding 30+ hosts and configuring product pages.
- Defined personas, KPIs, and validation metrics for initiatives (8:15 - Everything Is a Lesson, Cloud Stage).
- Benchmarked competitors (e.g. Xiaohongshu), producing word-frequency and trend analyses to guide content strategy.

Cloud and Smart Industries Group (CSIG), Tencent

Shenzhen, China

Assistant Product Manager – Supervisor: Mono

12/2021 – 03/2022

- Managed end-to-end requirements for subscription feature; coordinated cross-functional reviews with dev & UX.
- Upgraded 18+ solution pages (architecture diagrams, copy, icons, case studies) to improve usability.
- Supported Spring Festival campaign (prize rules, UX validation); authored automation workflows for deprecation/renaming.
- Enhanced SEO for case studies across 14 industries, boosting search visibility.

INVENTION PATENTS

- *A Cross-Modal Fetal Heart Monitoring Clinical Decision-Making System Based on Joint Attention Mechanisms and State-Space Models. (Patent Number: CN2411940S)*
- *An Audio-Visual System for Sleep Promotion Based on 40Hz Gamma Frequency Stimulation. (Patent Number: CN 202411422680.6)*
- *Ensemble deep learning models for EEG-based auditory attention decoding. (Under Review)*
- *Binary-Temporal Convolutional Neural Network for Multi-Class Auditory Spatial Attention Detection. (Under Review)*
- *A Visual Memory Training System Based on AI-Generated Content. (Under Review)*

HONORS & AWARDS

- 2024 Undergraduate Research Award, CUHK-Shenzhen, 12/2024.
- Ranked 4th, 2025 IEEE International Conference on Acoustics, Speech, and Signal Processing (ICASSP) EEG Music Classification Challenge, 11/2024.
- ICSR 2024 Robot Design Competition Finalist, 09/2024.
- 2024 Bremen Big Data Challenge: Global Top 10 Ranking, 03/2024.
- Top 10 Finalist (Adult Division), China Region, 2023 Hit Like A Girl Global Drumming Contest, 03/2023.
- Shenzhen Diligentia College Shanqun Scholarship, CUHK-Shenzhen, 08/2020.

LEADERSHIP & EXTRACURRICULAR ACTIVITIES

- **Leadership Experience:** Organized Students' Union events, such as the Freshman Ball and New Year Blessings, while managing team members, logistics, marketing, and event coordination.
- **Artistic & Creative Involvement:** Served as a percussionist for university orchestra, spokesperson for GlamorDrums, and founder of 'RennyDrums' to promote music through campus and regional performances.
- **Volunteer & Social Impact:** Volunteered with HOPE NGO to organize child protection webinars and co-developed China's first campus accessibility toolkit with UNICEF.

LANGUAGES & SKILLS

Standard English Tests: TOEFL: 94 (Speaking: 23, Writing: 25); GRE: 319 (Verbal: 149, Quant: 170, Writing: 3.5).

Programming: Python, Sklearn, Pandas, Numpy, PyTorch/Tensorflow, Shell, Matlab, LaTeX, Markdown, SQL, Git.

Other Skills: Prompt Engineering, Web Develop, Quantitative & Qualitative Data Analysis, Interface Design (Figma).

ACADEMIC REFERENCES

Prof. Haizhou LI, School of Data Science, CUHK-Shenzhen, [Webpage](#).

Prof. Wei-Chung HSU, School of Data Science, CUHK-Shenzhen, [Webpage](#).

Assoc. Prof. Xiang WAN, Shenzhen Institute of Big Data, CUHK-Shenzhen, [Webpage](#).

Prof. Gang CAO, School of Life and Health Sciences, Shenzhen University of Advanced Technology, [Webpage](#).

Asst. Prof. Pengcheng AN, School of Design and Creativity, Southern University of Science & Technology, [Webpage](#).

Assoc. Prof. Changmiao WANG, Shenzhen Institute of Big Data, CUHK-Shenzhen, [Webpage](#).