

YU-CHIEH JACK HO

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Hello! I'm Yu-Chieh (Jack), a curious AI researcher with product development experience.

As a seasoned Data Scientist with a Ph.D. from National Taiwan University, I have carved a niche in applying Machine Learning (ML) and Artificial Intelligence (AI) methodologies to transform business operations. I have leveraged these capabilities to conduct comprehensive user behavior modeling and extract value from large-scale data in Martech and Logistics industries.

As a Principal Data Scientist at GoGoX, I spearheaded projects to elevate the completion rate of our on-demand mobility platform and optimize user experiences across Hong Kong and Singapore. I excelled in converting stakeholder requirements into tangible ML problems and leading a team to devise robust solutions.

Prior to this, I served as a Senior Data Scientist at MoMagic, where I crafted deep learning models to analyze mobile user behavior using real-time bidding (RTB) traffic logs, enhancing target audience selection by 31-34%. In my stint at Quadas, I initiated the data science division and developed a deep-learning fraud detector to enhance traffic quality by focusing on high conversion rate (CVR) user requests.

RESEARCH STATEMENT

During my doctoral studies, I used deep learning and data-mining techniques as the foundation and recommender systems as the application domain, continually seeking optimal user-modeling and recommendation methods that balance accuracy, diversity, and group fairness. My contributions fall into three main areas:

1. Theoretical advances in recommender systems – long-tail diversity and group recommendation

In 2014, I introduced the concept of *Relative Preference* and formulated an optimization algorithm from a resource-allocation perspective that simultaneously improves accuracy, catalog coverage, and recommendation diversity (published at ACM WSDM '14).

Building on this, I embedded the notion of group consensus into a Factorization-Machine framework via latent-vector regularization, thereby balancing individual and collective preferences and delivering more precise group recommendations (published at IEEE ISCID '16).

2. Large-scale Heterogeneous Data Collaboration

I designed a deep-neural-network-based recommender framework in my dissertation that performs end-to-end feature extraction and learning. The architecture fuses multi-dimensional heterogeneous data, including content features, social context, and real-time transaction logs—to predict user preferences, resulting in a substantial boost in recommendation accuracy.

3. Successful Industrial Application

After graduation, I led multiple machine-learning projects in martech and mobility-on-demand industries—covering raw data analysis, proof-of-concept validation, and production deployment—that demonstrated the commercial value of academic methodologies.

This cross-disciplinary, hands-on work has deepened my understanding of the needs and pain points of users, developers, and decision-makers, reinforcing my conviction that Explainable AI (XAI) and Human-AI Interaction (HAI) will determine the next wave of AI innovation and successful commercialization. In 2024, more than 72% of enterprises identify Generative AI as a core investment, yet 57% of employees choose to use these models “under the radar” to boost output rather than reveal their source—exposing a critical gap in transparency and trust. Moreover, research shows that users truly benefit from generative workflows only when they participate as co-creators instead of passive editors.

Over the next three to five years, my central vision is to develop an ecosystem of explainable, trustworthy generative algorithms for human-AI co-creation. Building on my existing expertise in diversity-aware recommendation, generative-AI creativity support, and human-AI interaction, I aim to advance algorithmic innovation, deepen research in explainable AI (XAI), and drive interdisciplinary real-world deployment.

1. Familiarity–Estrangement Space 2.0: A Multi-Modal Framework for Controllable Novelty Generation

This year, in collaboration with Dr. Tsai at NTU D-School, I introduced the Familiarity–Estrangement Space (FES) algorithm, which quantifies the degree of “defamiliarization” in literary and design contexts. FES maps large-scale generated texts into a customized three-dimensional space, defined by familiarity and positive/negative estrangement, so that creators can retrieve passages aligned with their own creative intent and aesthetic taste. The work is slated for presentation at ICCV 2025.

Looking ahead, Dr. Tsai and I will continue developing a human-AI co-creation interface, conduct rigorous quantitative evaluations and user studies, and extend the FES concept to images, audio, and other modalities—transforming the random serendipity of generative algorithms into a controllable novelty.

2. Evolving Explanations: Merging AlphaEvolve with Circuit Tracing for Next-Generation XAI

In March 2025, Anthropic unveiled Circuit Tracing and Attribution Graphs, techniques for tracking the internal reasoning and computational pathways of large language models (LLMs). Using these methods, the researchers uncovered and

explained the hidden “language of thought” that enables cross-lingual reasoning, multi-path mental arithmetic, and forward-looking planning (e.g., rhyming in poetry). To date, these techniques offer the most fine-grained view of how LLMs reach their decisions.

Just two months later, in May 2025, Google DeepMind introduced the AlphaEvolve framework. By combining LLMs with evolutionary search, AlphaEvolve can automatically write code, verify its correctness, and iteratively refine it, already outperforming human-designed solutions in tasks such as matrix multiplication and data-center scheduling—saving Google millions of dollars in compute costs after internal deployment.

My research will integrate AlphaEvolve’s evolutionary search paradigm with Anthropic’s Circuit Tracing and Attribution Graphs, aiming to advance explainable AI (XAI) by automatically discovering, validating, and improving the explanatory circuits inside state-of-the-art language models.

EXPERIENCE

Principal Data Scientist

Gogox Holdings Limited

📅 Sep. 2021 – Present 📍 Taipei, Taiwan

In a fully remote environment, I have successfully fulfilled diverse roles as a tech lead, individual contributor, and cross-functional communicator, driving business growth with data-driven solutions.

I’ve streamlined our workflow by setting clear OKRs for junior members, and promoting an open and inclusive environment through biweekly ‘work from cafe’ events, fostering team interaction and face-to-face communication.

- **Project-AVA** - A Generative AI project focused on developing internal/external AI assistants by combining company knowledge and Large Language Models (LLMs). I Initialized and take responsibility for system design, task breakdown, and project management for the following components:
 1. GoGoBot-CS: A LLM-based customer service representative designed to respond accurately to client inquiries and identify conversational intent to trigger relevant services.
 2. Evaluator: An AI-assessment mechanism for QA Bots, featuring two AI personas capable of scoring bot responses providing constructive feedback, and simulating question-answer pairs to further enhance the evaluation process.
- **OA Project** - A cross-functional initiative focused on cultivating a loyal driver base within the on-demand mobility ecosystem. My contributions included interviewing stakeholders, leading technical initiation, and the subsequent development and launch of data-driven solutions in Hong Kong.
- **Order Recommendation and Gamification** - I headed the system design and PoC of a driver-order matching system, improving order coverage and completion rates by 41% and 30.8% respectively. I also spearheaded research on a novel short-term, fine spatial resolution demand forecasting model.

Large Language Models

LangChain

Prompt Engineering

Project Management

Fully-Remote Teamwork

Senior Consultant

SAS Institute Inc

📅 May. 2021 – Aug. 2021 📍 Taipei, Taiwan

Presales and data science consulting to the largest grocery chain store in Taiwan

EDUCATION

Ph.D. in Computer Science

National Taiwan University, Intelligent Agents Lab

📍 Taipei, Taiwan

Dissertation: “Towards Recommendation Diversity and Heterogeneous Data Collaboration: A Machine Learning Approach” (ACM-WSDM’14)

M.Sc. in Computer Science

National Dong-Hwa University

📍 Hualien, Taiwan

Bachelor in Computer Science

Tunghai University

📍 Taichung, Taiwan

Senior Data Scientist/ Senior Consultant

MoMagic Technologies Pvt. Ltd.

Feb. 2018 – Oct. 2020 – Dec. 2020 Taipei, Taiwan

Led the design and development of data-driven user profiling solutions for demographic inference for campaign optimization.

- **App-Category Distribution model:** improved Conversion per Impression (CPI) by 40%-500%. (comparing with generic users)
- **Deep Neural Network based CTR model:** Improved Click-Through Rate (CTR) by 31%-34% and kept more than 90% clicks, comparing with human targeting.
- **Model Incubator:** A workflow that integrates the training and prediction processes into Apache Airflow dags, which are deployed on Google Cloud Platform (GCP).

Worked closely with CSO, VPs on strategy planning and presales:

- Mentored a **cross-regional data science team** and organized online PoC to deploy and evaluate the proposed models in real campaigns.
- Collaborated with technical PMs from MediaTek to explore the data monetization opportunities of combining edge computing and deep learning.
- **Cross-border Presales:** Derived and presented a smart logistic proposal to SpiceJet (Gurgaon, India), and integrated customers' needs with machine learning knowledge into a scope statement.

Keras

Google Cloud Platform (GCP)

Apache Spark

Jupyter Lab

Cross-border Presales

Chief Data Scientist

Quadas Data

Apr. 2017 – Dec. 2017

Taipei, Taiwan

Built the first data science team for Quadas and delivered two machine learning solutions for real-time bidding (RTB) monitoring.

- **Intelligent Transaction Monitor:** Detected all known over-bidding events with only 35-55 false alarms (out of 1917 test events)
- **Deep Neural Network based CVR model** Saved 40% media cost with only 15%-30% conversion loss.
- Collaborated with cross-functional developers and deployed proposed solutions on the RTB system.

Scikit-learn

Real Time Bidding (RTB) System

Amazon Web Services (AWS)

Team Building

Visiting Scholar

University of Illinois at Urbana-Champaign

Aug. 2014 – May 2015

IL, USA

Worked with Dr. Thomas Huang and the Image Formation and Processing (IFP) group and proposed [novel deep-learning approaches](#) for recommender systems.

Tensorflow

Pandas

Python

Sponsored Researcher

Quanta Research Institute

Jan. 2012 – Dec. 2012

Taipei, Taiwan

Cooperated with interdisciplinary experts in an interactive design process and designed a social-aware restaurant recommendation APP: [Picus.Q](#)

ConceptNet

Design Thinking

Software Engineer

Corel Corporation

July 2007 – May 2008

Taipei, Taiwan

Maintained and enhanced software components of multi-media products.

SKILLS

Artificial Intelligence
Recommender System
Deep Learning
Data Mining
Proof of Concept
AI/ML Solution Pipelines
Cross-Regional TeamWork
Quantitative Data Analysis
Martech
Data Visualization
Human-Computer Interaction
Presales Consultant



LANGUAGES

Mandarin
English
Taiwanese Hokkien



INTERESTS

- **Travelling**– Road Trip, Backpacker, Sophisticated Resorts
- **Reading**– Novel, Philosophy, Poem
- **Movie**– Drama, Sci-fi, Fantasy
- **Music**– Folk, Jazz, Classical
- **Marathon, Cycling**– 21k runner / Pingtung to Hualien

ACTIVITIES

- **General Coordinator**, Lab Orientation, iAgents Lab 2012
- **Public Relationship and Student Mentor**, OpenHCI 2011, NTU NTUST
- **Project Lead**, Several research projects funded by National Science Council (NSC) and Industrial Technology Research Institute (ITRI) 2008-2013
- **Visiting Scholar**, Graduate Student Study Abroad Program (GSSAP), NSC 2014
- **Presentations** at several international conferences (e.g., ACM WSDM, New York) and business pitch (SpiceJet Limited, Delhi)

Ensign, Computer Science Instructor

Naval Technical School

📅 Dec. 2005 – Nov. 2006

📍 Kaohsiung, Taiwan

- **Courses:** Database system, Operating system, Ms-Office
- **System administration:** Maintained and enhanced the course scheduling system

SELECTED RESEARCH PROJECTS (3/6)

An Approach to Commonsense Knowledge Collection, Validation, and Reasoning by Coupled Human and Learning Agents

Intelligent Agents Lab, National Taiwan University

📅 2011 – 2012

📍 Taipei, Taiwan

Investigated and maintained a commonsense knowledge base system and developed applications upon it. ([project website](#))

Cloud-enabled ADL Recognition and Service Inference Technology

Intelligent Robot Lab, National Taiwan University

📅 2010 – 2011

📍 Taipei, Taiwan

Designed the architecture of ADL Recognition system. Completed a patent draft (technical articles) and published an academic [paper](#).

The Attentive Home

INSIGHT Center, National Taiwan University

📅 2008 – 2010

📍 Taipei, Taiwan

Designed and conducted a user study to understand how the technology fulfills the needs of residents in their daily living. ([website](#))

PUBLICATIONS

ICCC'25	Making the Familiar Strange: A Computational Approach to Defamiliarization in Creativity Support Ho, Y.-C., Tsai, W.-C. Lai, Z.-Y. (2025), in <i>16th International Conference on Computational Creativity</i>
ISCID'16, IEEE	Consensus Oriented Recommendation Ho, Y.-C., Liu, X.-M., Hsu, Y.-J., Huang, S.-T. (2016), in <i>9th International Symposium on Computational Intelligence and Design</i>
ACM WSDM'14	Who likes it more? Mining Worth-Recommend Items from Long Tails by Modeling Relative Preference Ho, Y.-C., Chiang, Y.-T., Hsu, Y.-J. (2014), in <i>7th International ACM Conference on Web Search and Data Mining</i> (Acceptance Rate: 18%)
JSAL'13	An Efficient Index Structure for Go Ho, Y.-C., Hsu, S.-C., and Yen, S.-J. (2013), in <i>Proceedings of the 27th Annual Conference of the Japanese Society for Artificial Intelligence</i>
IEEE CLOUD'11	A Cloud-based Accessible Architecture for Large-scale ADL Analysis Huang, Y.-C., Ho, Y.-C., Lu, C.-H., and Fu, L.-C. (2011), in <i>4th IEEE International Conference on Cloud Computing</i>
Book Chapter	Information and Communications Technology in a Smart Home Fu, L.-C., and Ho, Y.-C. (2011), in <i>Smart Living, Living Smart</i> (Chap. 4), Garden City Publishers, 2011
-	A Perspective on Fulfilling Technological Needs of Residents Feng, Y., Fu, L.-C., Huang, C.-Y., Lu, C.-H., Ho, Y.-C. and Yen, Y. C. (2009), in <i>Symposium of Globalization, Urban and Housing Research</i>
Automation (Journal)	The NTU Attentive Home Fu, L.-C., Wu, C.-L., Lu, C.-H., Liao, C.-F., Ho, Y.-C., and Liu, Y.-C. (2009), <i>Automation</i> , vol. 20, no. 4, pp. 18–35, 2009
WCB'05	Information Retrieval in Go Game Records Yen, S.-J., Yang, T.-N., Lee, C.-J., and Ho, Y.-C. (2005), in <i>Proceedings of Workshop on the Sciences of the Artificial</i>