

# Yu-Chieh Jack Ho

## Data Scientist & AI Researcher

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### Professional Summary

I am an AI researcher with product development and consulting experience. As a senior data scientist at MoMagic Technologies, I modeled mobile users' behavior by training deep neural networks upon large-scale real-time bidding (RTB) traffic logs. These models were applied to select target audiences in real campaigns, and the results outperformed human selection by 31-34%. In the meantime, I mentored a cross-regional data science team, and we developed a concrete proof-of-concept (POC) SOP for product optimization. In the 3rd year at MoMagic, I worked closely with cross-functional stakeholders on strategy planning and represented our data science team in corresponding collaborations with strategic partners.

I initiated the data science team at Quadas, a start-up. My team developed a deep-learning fraud detector, which helps the bidding system filter out low-value traffics and target requests from users with high conversion rates (CVR).

I received my Ph.D. from National Taiwan University and have published six research papers on advancing recommender systems and IoT systems by leveraging deep learning and data mining methodologies.

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### Work Experience

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#### **MoMagic Technologies Pvt. Ltd. / Senior Data Scientist / Data Science Consultant**

Feb. 2018 – Oct. 2020 / Nov. 2020 – PRESENT, 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 which Integrate the training and prediction processes into Apache Airflow dags and deployed on Google Cloud Platform automatically.

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.
- Derived and presented a smart logistic proposal to SpiceJet (Gurgaon, India), and integrated customers' needs with machine learning knowledge into a scope statement.

#### **Quadas Data / Chief Data Scientist**

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-based Fraud Detector: saved 40% media cost with only 15%-30% conversion loss.

- Collaborated with cross-functional developers and deployed proposed solutions on the RTB system.

### **University of Illinois at Urbana-Champaign / Visiting Scholar**

Aug. 2014 - May 2015, IL, U.S.A.

Worked with Dr. Thomas Huang and the Image Formation and Processing (IFP) group and proposed novel deep learning approaches for recommender systems [\[1\]](#).

### **Quanta Research Institute / Sponsored Researcher**

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](#)

### **Corel Corporation / Software Engineer**

July 2007 - May 2008, Taipei, Taiwan

Maintained and enhanced software components of multi-media products.

### **Naval Technical School / Ensign, Instructor (Computer Science)**

Dec. 2005 - Nov. 2006, Kaohsiung, Taiwan

- Courses: Database system, Operating system, Application software
- System administration: Maintained and enhanced the course scheduling system

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## **Selected Research Projects (3/6)**

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

2011 - 2012, Intelligent Agents Lab, National Taiwan University.

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

### **Cloud-enabled ADL Recognition and Service Inference Technology**

2010 - 2011, Intelligent Robot Lab, National Taiwan University.

Designed the architecture of ADL Recognition system. Completed a patent draft (technical articles) and published an academic paper [\[3\]](#).

### **The Attentive Home**

2008 - 2010, National Taiwan University, INSIGHT Center

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

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## **Proficiency**

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### **Research Interests**

*Artificial Intelligence* (10+ yrs), *Machine Learning* (10+ yrs) and *Data Mining* (10+ yrs) on Recommender Systems, Digital Marketing and Human Computer Interaction

### **Professional Skills**

### Machine Learning

Tensorflow, Keras, Scikit-learn, Spark MLlib, BQML(GCP)

### Quantitative Data Analysis

SQL, Pandas, Spark DataFrames, Numpy, Matlab

### Proof of Concept & Product Deployment

Jupyter Notebook, Google Cloud Platform, Amazon Web Service, Docker, Tableau

### Languages

Mandarin Chinese (native speaker)

English (fluent, TOEIC 840): Gave Presentations in several international conferences (e.g., ACM WSDM, New York) and business pitch (SpiceJet Limited, Delhi)

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## Education

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### National Taiwan University

Taipei, Taiwan

*Doctor of Philosophy* in Computer Science.

Dissertation: “Towards Recommendation Diversity and Heterogeneous Data Collaboration: A Machine Learning Approach” [\[2\]](#)

### National Dong-Hwa University

Hualien, Taiwan

*Master* in Computer Science

### Tunghai University

Taichung, Taiwan

*Bachelor* in Computer Science

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## Activities

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### Leadership

General Coordinator, Lab Orientation, iAgents Lab 2012

Public Relationship and Student Mentor, OpenHCI 2011, NTU & NTUST

Project Lead of several research projects funded by National Science Council (NSC) and Industrial Technology Research Institute (ITRI) ()

### Scholarship

Graduate Student Study Abroad Program (GSSAP), NSC 2014

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## Selected Publications (3/8)

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[1] **Ho, Y.-C.**, Liu, X.-M., Hsu, Y.-J., Huang, S.-T., “Consensus Oriented Recommendation”, 9<sup>th</sup> International Symposium on Computational Intelligence and Design. (ISCID 2016, IEEE)

[2] **Ho, Y.-C.**, Chiang, Y.-T., Hsu, Y.-J., “Who likes it more? Mining Worth-Recommend Items from Long Tails by Modeling Relative Preference”, 7<sup>th</sup> International ACM Conference on Web Search and Data Mining. (ACM WSDM 2014)

[3] Huang, Y.-C., **Ho, Y.-C.**, Lu, C.-H., and Fu, L.-C., “A Cloud-based Accessible Architecture for Large-scale ADL Analysis”, 4<sup>th</sup> IEEE International Conference on Cloud Computing. (2011)