

CHARIN POLPANUMAS

BASIC INFORMATION

288/183 CONNER Ratchathewi, Petchaburi Road, Ratchathewi, Bangkok, Thailand 10400
charipol@amazon.com, +66812550698
Website: github.com/cstorm125

RELEVANT WORK EXPERIENCE

Senior Applied Scientist / Senior AI Solution Architect

July 2021 - Present

Amazon Japan and Thailand

- Build personalized customer experience. Estimate heterogeneous treatment effects. Simulate customer behaviors with LLMs. Marketing automation with generative models. Productionized systems behind Smile Sale Brand Recommendation, Brand Promotion for You, Point Up Campaign, Matometoku in Amazon JP.
- Build production-grade AI solutions for ASEAN frontier customers.

Head of Data Science

July 2019 - June 2021

Central Group

- * Product search and ranking optimized for Thai and English with Elastic stack and learning-to-rank models augmented by time-series user interactions and pretrained product embeddings
- * Product-to-product recommendation by with learned representations
- * Personalized recommendation by bayesian personalized ranking
- * Cross-business-unit, omni-channel CRM database of over 6M customers; learned embeddings and lookalike model to send tailored communications to the most targeted customers

Data Scientist

April 2018 - June 2019

BridgeAsia

- * Abnormality detection in X-ray images with customized DenseNet-121 (label smoothing and finetuning with local data among other optimizations), improving AUC from vanilla DenseNet-121 of 0.71 to 0.90. The improved model saves 59% of time on average with radiologist-level sensitivity of 92.6% (9% prevalence).
- * Health-risk prediction based on health checkup results and historical visits using deep neural networks with mixed-input. Predict duration until next visit because of hypertension, diabetes and obesity with mean absolute error of less than 14 days.

Data Scientist

April 2016 - March 2018

Lazada

- * Led a team to implement dynamic ads pricing based on app user behaviors. Predicted new customer acquisition rate with MAPE of under 10% using regularized logistic regression, indifferent performance with two-layer multi-layer perceptrons. Productionized the data pipelines and model with Hive, Presto, R and Airflow churning over 500k installs and 10M app events monthly. Reduced spending on app user acquisition by over 50%.
- * Implemented a real-time bidding for Criteo ads with deep Q-learning on Pytorch, achieving human-level cost per order within one week of model running. Deployed for over 100 ads campaigns over 6 countries.
- * Adapted first-order Markov chains for marketing channel attribution instead of first-touch, last-touch and other rule-based approach. Patched over 100GB of transaction data into Markov chains and a transition matrix.

PUBLICATIONS

As first author:

- Wang, M., & Polpanumas, C. AdaRec: Adaptive Recommendation with LLMs via Narrative Profiling and Dual-Channel Reasoning. In *1st ICML Workshop on Foundation Models for Structured Data*.
- Lowphansirikul, L., Polpanumas, C., Jantrakulchai N., & Nutanong, S. (2021). WangchanBERTa: Pretraining transformer-based Thai Language Models. arXiv preprint arXiv:2101.09635.
- Polpanumas, Charin, et al. "AI Builders: Teaching Thai Students to Build End-to-End Machine Learning Projects Online." 2021 IEEE International Conference on Engineering, Technology & Education (TALE). IEEE, 2021.

As co-author:

- Li, Q., Singh, R., Polpanumas, C., Fiez, T., Kumar, N., & Chakrabarti, S. (2024). Segment discovery: Enhancing e-commerce targeting. *arXiv preprint arXiv:2409.13847*.
- Phatthiyaphaibun, W., Chaovavanich, K., Polpanumas, C., Suriyawongkul, A., Lowphansirikul, L., Chormai, P., ... & Udomcharoenchaikit, C. (2023). PyThaiNLP: Thai natural language processing in Python. *arXiv preprint arXiv:2312.04649*.
- Panyut Sriwrote, Wei Qi Leong, Charin Polpanumas, Santhawat Thanyawong, William Chandra Tjhi, Wirote Aroonmanakun, Attapol T. Rutherford; The Thai Universal Dependency Treebank. *Transactions of the Association for Computational Linguistics* 2025; 13 376–391. doi: https://doi.org/10.1162/tacl_a_00745
- Trakuekul, P., Leong, W. Q., Polpanumas, C., Sawatphol, J., Tjhi, W. C., & Rutherford, A. T. (2026). Thaicoref: Thai coreference resolution dataset. *Language Resources and Evaluation*, 60(1), 16.
- Lowphansirikul, L., Polpanumas, C., Rutherford, A. T., & Nutanong, S. (2020). scb-mt-en-th-2020: A Large English–Thai Parallel Corpus. arXiv preprint arXiv:2007.03541.
- Ruchakorn, N., Ngamjanyaporn, P., Suangtamai, T., Kafaksom, T., Polpanumas, C., Petpisit, V., ... & Pisitkun, P. (2019). Performance of cytokine models in predicting SLE activity. *Arthritis research & therapy*, 21(1), 287.
- Yoon, Yeujun, et al. "The Impact of Word of Mouth via Twitter On Moviegoers' Decisions and Film Revenues." *Journal of Advertising Research*, vol. 57, no. 2, 2017, pp. 144–158., doi:10.2501/jar-2017-022.

EDUCATION

Master's Degree, Management (Marketing Research)

October 2012 – September 2014

Peking University

* Grantee of Scholarship from Peking University HSBC Business School

Bachelor's Degree, Economics (Marcoeconomics)

April 2008 – March 2012

Hitotsubashi University

* Grantee of MEXT Scholarship

OTHER QUALIFICATIONS

TOEFL iBT 118/120; GRE Verbal/Quantitative/Writing 162/166/4.8; IELTS General Training 8.0; Close-to-native Japanese