Ted Chaiwachirasak

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Hands-on **Machine Learning Engineer** with 5 years of experience in recommender systems, personalizations, large language models, and machine learning in production systems.

Experience

Applied Machine Learning Engineer — Jan 2023 - Now
Crossing Minds — *Toronto, ON*

- Improved out-of-stock product page conversions for a multi-billion dollar company by 3.8% with a User-Guided Multimodal Item Embeddings substitution model (PyTorch, Transformer, ResNet, contrastive learning).
- Built an LLM-powered conversational search with a search hit rate of 29.8% (RAG, dynamic few-shot prompting).
- Reduced offline recommendation inference time by 82% for a dataset of over 15 million items through batching, Numba, PyTorch, and vectorization techniques.
- Developed a Python library for generating interactive analytics reports for customers and internal teams.

Data Scientist — Mar 2020 – Aug 2021
Agoda - Hotel Ranking Team — *Bangkok, TH*

- Improved the hotel recommendation system by training Hotel2vec embeddings from user behavior data, achieving a statistically significant uplift of 0.74% in bookings from an A/B test (Python, TensorFlow).
- Cut hotel ranking experimentation time from weeks to days by implementing interleaving techniques in A/B testing from the ground up.
- Extracted feature importance from the hotel ranking model to help the team decide on features to maintain with LISTwise ExplaiNer (LISTEN).
- Built a React.js web app to allow the team to evaluate hotel ranking results interactively, streamlining the development and evaluation process.

Machine Learning Engineer — Sep 2018 - Mar 2020
Agoda - Personalization Team — *Bangkok, TH*

- Preprocessed 600M+ daily user-generated events to create personalized content such as hotel recommendations, personalized hero images, and pre-selected hotel filters. (Spark, Hive, Impala)
- Implemented and deployed large-scale ML features that serve millions of daily users, ensuring high performance and reliability (Scala, TensorFlow, HDFS, Docker).
- Optimized the hotel recommendation model's data size and reduced the service's uptime by 80% by using Scala's standard serializer instead of MLeap.
- Automated docker deployment, integration tests, and load tests by setting up CI/CD pipelines on TeamCity.

Education

University of Toronto — Aug 2021 - Dec 2022
Master of Science in Applied Computing (MScAC) — *Toronto, ON*

- Vector AI Scholarship Recipient 2021 [Link]

Sirindhorn International Institute of Technology (SIIT) — Aug 2014 - May 2018
Computer Engineering - Intelligent System Track — *Bangkok, TH*

Project

Faster Hyperparameter Optimization: Meta-Learning & Multi-fidelity Optimization [Report] — May 2022 - Dec 2022

A Deeper Look into Dense Shortcut Nets (Image) [GitHub] [Report] — Apr 2022

Technical Skills

Languages: Python, Scala, JavaScript, SQL, Java
Big Data: Hadoop, Spark (Scala & Python), Impala, Hive, HDFS
Google Cloud Platform (GCP): BigQuery, Logs Explorer/Analytics, Google Analytics
RecSys: Collaborative/Content-based Filtering, Matrix Factorization, Factorization Machines, Deep Learning for RecSys
Deep Learning: MLP, CNN, RNN (LSTM, GRU), Attention Mechanism, Transformers, Word2Vec, BERT, ColBERT
Python Packages: PyTorch, TensorFlow, JAX, NumPy, Numba, Pandas, Polars, Streamlit, Seaborn, Plotly, Matplotlib
Others: docker, pyenv, virtualenv, poetry, pdm, git, vim