

Nate Puangpanbut

Vancouver, BC

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PROFESSIONAL SUMMARY

Experienced Machine Learning Engineer and Data Scientist with 9+ years of proven success in leveraging applied machine learning, data analytics, and accelerated AI adoption in corporate and industry settings. Adept at independently driving the ML research process, from defining AI problems to implementing machine learning products. Skilled at translating complex challenges into high-impact solutions and actionable insights, resulting in substantial **cost savings and profits over \$15.37 million**.

TECHNICAL SKILLS

- **Machine Learning (ML):** Regression, Classifications, Clustering, Time-series Forecasting, Predictive Analytics, Predictive Maintenance, Natural Language Processing, Large Language Models (LLMs), Deep Learning, Generative AI, Optimization, Simulation Modeling, Statistics, Data Visualizations
- **Statistics:** Probability Theory, Hypothesis Testing, A/B Testing, Bayesian Statistics, Survival Analysis
- **Programming Languages:** **Python** (Pandas, NumPy, Scikit-learn, PyTorch, Tensorflow, OpenCV, HuggingFace, Beautiful Soup, Flask, PySpark, etc ..), **R** (Tidyverse, ggplot, etc ..), **MATLAB**, **C**, **C++**, **SQL**, **PostgreSQL**, **No-SQL**, **MongoDB**
- **Cloud Platforms&Others** **AWS**, **MS Azure**, **GCP**, **Tableau**, **PowerBI**, **Git**, **CI/CD**, **Docker**, **DevContainer**, **DevOps**, **MLOps**, **MLflow**, **TFX**
- **Project Management:** **Agile**, **Design Thinking**, **UI/UX Design**, **Analytical Thinking**, **Problem Solving**, **Growth Mindset**

WORK EXPERIENCE

Data Scientist

Sept 2024 – Now

Eon Labs Ltd.

Vancouver, BC

- Developed and implemented an ML-based portfolio allocation strategy for cryptocurrency trading, improving cumulative returns and reducing maximum drawdown, **achieving a 2.66x improvement in Risk-Reward Ratio**.
- Enhanced performance by integrating insights from cutting-edge research papers and optimizing strategies with innovative solutions to meet targeted goals.

Data Analyst

Nov 2023 – Oct 2024

Telus International AI Inc.

Vancouver, BC

- Worked on projects primarily aimed at **improving and optimizing search engine models**. Conducted thorough research to verify the accuracy and relevancy of a wide range of data and information.

Senior Data Scientist / Assistant Manager - Data Science

Aug 2018 – Jun 2022

SCG Chemicals Co., Ltd

Bangkok, Thailand

- **Led DS Team and Projects** | Gathered business requirements from users, conducted data analysis, defined project objectives, established key product metrics, developed machine learning solutions, synthesized insights and outcomes, validated and monitored key performance indicators, drove continuous improvement and sustainability, and led a team of data scientists.
- **Price and Demand Forecasting** | Developed large-scale price and demand forecasting models on non-stationary financial indexes resulting in **savings of \$1.75M/year**. Applied feature engineering and feature selection techniques to identify unnoticed leading features, and developed an explanation system pivotal for driving business decisions.
- **Material Specification Prediction** | Collaborated and built predictive models for raw material spec.; developed an automated ETL process running on MS Azure to combine and transform multiple data types from different sources using Azure Data Factory, Azure ML Pipeline, and RPA, enhanced the model accuracy up to 88% and **saved \$600k annually**. Constructed PowerBI dashboard to monitor key matrices and performances.
- **AI for Document Extraction** | Developed advanced ML processes to convert non-functional data such as unstructured text or scanned images of engineering documents; **increased accuracy by 93%**, **saved \$400k/year**, and created a rapid prototype deployed on GCP which was projected to generate **\$8M**.
- **Supply Chain Optimization** | Constructed MINLP optimization models using Gurobi, led to **cost saving of \$3M annually**. Developed RPA systems to improve Supply Chain planning processes using AA360 and UiPath, **saved \$1.5M annually**.
- **Sales & Operation Platform** | Created a sales and reporting platform including dashboards and reports to track KPIs, and metrics, and provide insights and improvements to teams and executive management.

Advanced Process Control Engineer / Control Systems Researcher

Jan 2014 – Jul 2018

SCG Chemicals Co., Ltd

Rayong, Thailand

- **Anomaly Detection System** | Developed model-based anomaly detection system for process equipment using Auto-associative models(AAKR, AANN) and fault-detection with a new prognostic framework resulting in faster fault detection; **88% F1 score**.
- **Valve Stiction Detection & Quantification** | Researched on the analysis of Valve Stiction in industrial control valves, developed novel data-driven valve stiction models resulting in faster quantification algorithm and revealed un-for-seen stiction characters.

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- **Boiler Optimization** | Developed data-driven model and optimization algorithms to optimize Stream and Boiler systems leading **\$92k cost savings** annually.
- **Control & Automation** | Maintained, modified, and improved the reliability of advanced process control and automation systems for 11 manufacturing plants.

Instrument Engineer

May 2006 – Dec 2011

SCG Chemicals Co., Ltd

Rayong, Thailand

- Completed 11 key projects, reducing costs at approximately **\$940k** and prevented production losses at **\$690k**.
- Handled maintenance work of instrumentation equipment and specialized in DCS and PLC. Coordinated over 30 Planned Shutdowns as an Instrument Team Leader. Managed a team of 3 engineers, 10 technicians, and supervised 200 contractors.

EDUCATION

Master of Data Science

Sept 2022 – Jun 2023

University of British Columbia (UBC)

Vancouver, Canada

- 95 individuals from 2000+ applicants - **GPA 3.90**

MSc in Electrical Engineering

Jan 2012 – Dec 2013

University of Southern California (USC)

Los Angeles, USA

- Scholar student by SCG Chemicals and USC Thai Club President (2013)
- Research assistant: Modeling of Driver Behaviors in Lane Changing

Bachelor of Instrumentation Engineering

Aug 2002 – Apr 2006

King Mongkut's Institute of Technology, Ladkrabang (KMITL)

Bangkok, Thailand

- Undergraduate thesis: The Development of All Terrain Rocker – Bogie Robot

PROJECTS and CERTIFICATIONS

The Price is Right | Worked with Olyns Co., Ltd (Santa Clara, USA) on a full-time Capstone project. Analyzed customer behavior of recycling users, developed machine learning models for demand forecasting, and built a surge price algorithm.

Automatic Speech Recognition | Developed an automatic speech recognition system using Hidden Markov Model(HMM), Mel-frequency cepstrum coefficients(MFCC) features, and Viterbi algorithm.

Australian Rainfall Prediction | Production-level ML models on large-scale datasets using Flask and PySpark on AWS EC2 and S3.

Energy Efficiency Analysis | Predicted the heating load of buildings and investigated feature importances.

AirBNB Data Analysis | Analyzed important factors and predicted popularity of AirBNB listing

My GAN Wife | Constructed new images using Generative Adversarial Network(GAN)

EPL Ranking with Bayesian Inference | Compared skills and ranking of EPL teams using Bayesian Inference

chembox and chemboxR | Python/R packages calculating molecular information based on chemical formulas

Certifications :

- Machine Learning Engineering for Production (MLOps) Specialization by DeepLearning.AI
 - Introduction to Machine Learning in Production
 - Machine Learning Data Lifecycle in Production
 - Machine Learning Modeling Pipelines in Production
 - Deploying Machine Learning Models in Production
- Machine Learning Operations (MLOps): Getting Started by Google Cloud
- Guided Tour of Machine Learning in Finance by New York University