

PATTAPOL (PHOOM) SIRIMANGKLANURAK

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EDUCATION

Dartmouth College, Hanover, NH, USA

GPA 3.76/4.00

BA, Majors: Applied Mathematics; Applied Statistics

Expected 2028

Relevant Coursework: Accelerated Multivariable Calculus; Differential Equations; Linear Algebra; Combinatorics; Topics in Algebra; Object-Oriented Programming; Modern Statistical Computing; Evolutionary Game Theory (academic excellence awarded); AI and Machine Learning; Linear Models; Software Design and Implementation; Probability; Data Visualization; Database Systems

WORK EXPERIENCE

Accenture

Bangkok, Thailand

Data Engineer Intern

June 2026 – Present

- Migrated databases to Oracle Financial Services Analytical Applications (OFSA) via Databricks-based ETL pipelines with Airflow, optimizing complex SQL queries and schema mappings to improve query runtime.
- Built automated data validation and quality-check scripts (Python, SQL) that flagged schema mismatches pre-migration, reducing downstream data integrity issues ahead of production cutover.
- Served as technical liaison to cross-functional stakeholders and presented data quality findings that shaped migration priorities.

Indorama Ventures

Bangkok, Thailand

Data Engineer and Investor Relations Intern

June 2025 – August 2025

- Engineered an automated data normalization workflow (Python, Pandas, NumPy) processing over 3,000,000 client records, standardizing formats across disparate source systems.
- Built a Thai-to-English financial data translation tool using heuristic text processing, cutting turnaround from days to hours.
- Integrated Stock Exchange of Thailand data feeds with Bloomberg and Refinitiv API queries into a centralized Power BI reporting layer, giving the Investor Relations team real-time visibility into market metrics.

Contextual Dynamics Lab

Hanover, New Hampshire

Research Assistant

March 2026 – Present

- Conducted literature review on transformer architecture convergence and stylometric cross-entropy metrics to inform experimental design for an ongoing NLP research project.
- Benchmarked baseline language models against linguistic variants (content-only masks, POS syntax mapping) using PyTorch and HuggingFace, evaluating results via cross-entropy and perplexity metrics.

Computational Linguistics Lab (DartWrite)

Hanover, New Hampshire

Research Assistant

March 2025 – March 2026

- Coded and statistically analyzed rhetorical source-usage patterns across student writing, using R and Python for trend analysis.
- Built an NLP pipeline to comprehend the evolution of academic writing at Dartmouth, presenting results to faculty.

SELECTED PROJECTS

ManaMetrics: A Trading Card Value Predictor

- Architected an end-to-end data pipeline orchestrated via Airflow DAGs, ingesting real-time card pricing data from Scryfall API into S3 (raw layer) and Snowflake (curated layer), replacing manual price lookups.
- Used PySpark to process and transform large-scale historical pricing data, engineering predictive features from playability signals (tournament play rates, EDHREC trends), and Reserved List status; log-transformed price targets to correct for skew.
- Trained XGBoost/LightGBM regression models on feature tables to detect market trends, surfacing actionable insights.

Machine Learning for Urban Air Quality: Gradient Boosting & Causal Analysis of PM2.5

- Developed an ML framework isolating meteorological drivers of urban PM2.5 concentrations, separating atmospheric stagnation effects from vehicular emissions to quantify environmental disparities across neighborhoods.
- Trained and validated LightGBM and XGBoost models that outperformed OLS baselines.
- Engineered features from weather and traffic datasets (wind speed, traffic volume) to separate correlation from causal signal.

LEADERSHIP & ACTIVITIES

Pan Asian Advising, *Coordinator*; **International Student Experience Office**, *Coordinator*; **Thai Student Association**, *President*; **Model UN**, *Committee Director*; **World Affairs Council**, *Treasurer*; **Aegis Yearbook**, *Layout Chair*; **Zeta Psi Fraternity**, *Member*;

SKILLS

Programming Languages: (*Proficient*) Python, SQL, R, VBA, HTML/CSS, Java (*Familiar*) C/C++, JavaScript/Typescript

Technology/Frameworks: (*Proficient*) Pandas, NumPy, sklearn, HuggingFace, Power BI, XGBoost/LightGBM (*Familiar*) Airflow, PySpark, Snowflake, Databricks, Google BigQuery, Oracle OFSAA, AWS (S3, Lambda)

Spoken Languages: Thai (Native), English (Native), Japanese (Intermediate), Mandarin (Elementary)