

Pham Hoang Duy (Tom) Ngo

Curriculum Vitae

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Education

Santa Clara University, Master of Sciences in Artificial Intelligence, GPA: 3.93, 2026 - 2027

University of California - Davis, Bachelor of Arts in Economics, 2021 - 2025

Awards

- Dean's Honor List Winter Quarter 2024
- Dean's Honor List Fall Quarter 2024
- Initiative recognized by Susan Corbelli (SMUD)

Publications

- Brian Trinh, Samarth Kulkarni, **Duy P. Ngo**, Krishna Murthy Kattiyan Ramamoorthy. **Application-Aware Learning-Based Uplink Traffic Allocation for Wi-Fi 7 MLO**, IEEE 32nd International Symposium on Local and Metropolitan Area Networks (LANMAN), 2026.

Employment

- **Wireless Intelligent Networks (WIN) Lab**, Research Assistant, January. 2026 - Present
 - Researched deep reinforcement learning agent implementation to solve quadrilemma optimization problems for 6G cellular networks technology, including Fluid Antenna, Pinching Antenna, RSMA, and NOMA
 - Developed a comprehensive ns-3 simulation environment to design, train, and evaluate reinforcement learning agents for intelligent Wi-Fi 7 network optimization, enabling reproducible experimentation and performance analysis

- Mentored and instructed lab members on designing, implementing, and executing ns-3 simulations, improving team productivity, and ensuring correct and efficient use of the simulation framework
- **Sacramento Municipal Utility District (SMUD)**, Data Science Intern, Aug. 2024 - Present
 - Developed, built, and fine-tuned a demographic cohort-classifying Machine Learning model with 84% precision rate using Gradient Boosting (XGBoost), K-means Clustering, and Bidirectional Long Short-Term Memory in Python (TensorFlow, scikit-learn) and R
 - Deployed & implemented AI/ML models into production environment using Docker, Airflow, and GitLab to automatically handle 600,000 predictions daily, increasing research and survey sampling efficiency by 30%
 - Enhanced market research efficiency by 50% by analyzing & validating 6,000 vendor-supplied data points using Pandas, NumPy & Excel, enabling accurate identification of appropriate data sources for survey sampling
 - Researched & advised on predictive models to forecast electric vehicle adoption rate in Sacramento County using Scikit-learn & TensorFlow, determining how SMUD expands their charging infrastructure and power grid in the future
- **Davis Economics Collective (DEC)**, Head of Career Development Alumni Relations, Oct. 2024 - Jun. 2025
 - Led the Career Development & Alumni Relations team organizing 12 professional workshops with 100% retention rate, enhancing member engagement and professional growth
 - Established and maintained relationships with over 60 economics alumni to support DEC initiatives, supporting DEC initiatives and fostering a robust professional network
 - Spearheaded the annual mentorship program, facilitating 1-on-1 mentorship between club members and Economics alumni, promoting career development and alumni engagement
- UC Davis Department of Economics**, Research Fellows, May. 2024 - Jun. 2024
 - Extracted and constructed dataset to documents Marriage Bar policy evolution at city level in USA from 1880 to 1940
 - Assisted PhD researcher in collecting data from historical newspapers, delving into the archives to uncover how gender policies affected people's lives

Relevant Coursework

- Math: Linear Algebra, Multivariate Calculus, Differential Calculus
- Statistics and Machine Learning: Statistics, Data Storytelling, Gateway to Data Science, Financial Forecasting, Econometrics, Analysis of Economics Data, Economics & Business Data Analytics (Machine Learning)
- Computer Sciences: Programming & Problem Solving, Object-Oriented Programming, Discrete Math for Computer Science, Image and Video Processing

Projects

- **Job Tracker AI Agent**, October. 2025
 - Built an autonomous AI Agent leveraging OpenAI LLMs, Gmail API, and Google Sheets API to track, analyze, and update job application data from emails in real time, capable of handling 1,000+ emails daily
 - Engineered a semantic extraction pipeline achieving 100% accuracy in identifying company, role, recruiter, and
 - Reduced manual email tracking time by 95% through automating end-to-end CRM synchronization, enabling 24/7, zero-maintenance system performance application status details across diverse email formats
- **Customer Demographics Cohort Prediction**, Sacramento Municipal Utility District (SMUD), Dec. 2024
 - Optimized model's precision by 10% through fine-tuning model's hyperparameter using Bayesian Optimization & HyperOpt
 - Achieved a 20% increase in accuracy by developing a K-means clustering pipeline to perform feature engineering for the master model, processing over 7,000 geospatial records
 - Enhanced data quality by 100% using ArcGIS Geocoding API to retrieve missing geospatial data, ensuring robust analysis
 - Improved model's decision rate by 40% by resolving imbalance training dataset using SMOTE oversampling technique
- **Impact of Education and Government Spending on Unemployment Rates**, Nov. 2024
 - Conducted a panel data analysis using government expenditure and unemployment data from the World Bank Open Data
 - Built lagged econometric models on 2,599 datapoints in Stata to investigate the causal relationship between government education spending and unemployment rates, selecting optimal lags using AIC/BIC criteria
 - Discovered no statistically significant correlation or causality between the variables, highlighting challenges of omitted variable bias and endogeneity

Skills

- **Tech:** Stata, Python, R, SQL, SAS, C/C++, BASH, Linux, TensorFlow, Scikit-learn, PyTorch, OpenCV, Airflow, Docker, Git, HyperOpt
- **Analytics:** Machine Learning, Deep Learning, Neural Network, Statistical Modeling, Optimization, Predictive Modeling, NLP, LLMs, AI

Certifications and Licenses

IBM Data Visualization and Dashboards with Excel and Cognos; IBM Excel Basics for Data Analysis; IBM Introduction to Data Analytics; IBM Python for Data Science, AI & Development; Power BI Essential Training September; Machine Learning with Python: Foundations; Docker Foundations Professional Certificate