Nachat Jatusripitak

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Research Interests

Dynamic optimization, mechanism design, responsible operations, sustainability, emerging economies

Education

Stanford University, Stanford, CA
M.S., Management Science and Engineering. GPA: 4.03/4.3 **2025–2026 (expected)**
- Track: Data and Decisions

Stanford University, Stanford, CA
B.S., Computer Science, with Distinction. GPA: 4.07/4.3 **2021–2025**
- Track: Artificial Intelligence; Minor: Mathematics
- Senior Thesis: *Short-Term PM2.5 Forecasting using Gradient Boosting on Geospatial Data* (advised by Dan Iancu and Mykel Kochenderfer)

Selected Coursework

Real Analysis (MATH 171), Linear Algebra (MATH 113), Optimization (MS&E 311), Stochastic Methods (MS&E 324), MDPs (MS&E 235A), Theoretical Statistics (STATS 200)
Courses marked with (*) are in progress

Honors, Grants, & Fellowships

- Phi Beta Kappa, 2025
- Tau Beta Pi, 2024
- Stanford Woods Institute MUIR Program Fellowship, 2024
- Stanford VPUE Conference Grant, 2023
- Stanford Physics Summer Research Program Fellowship, 2022

Research Experience

Research Assistant, *Graduate School of Business*, Stanford University **2023–2025**
Advisor: Dan Iancu
Research Areas: geospatial machine learning, PM2.5 forecasting, agricultural sustainability
- Built and trained U-Net CNNs and tuned XGBoost models for grid-based PM2.5 forecasting
- Performed hypothesis testing and spatiotemporal autocorrelation analyses on geospatial data
- Integrated climate reanalysis and satellite-retrieved data using GEE and geospatial libraries
- Synthesized literature on pollution emissions sources, transport processes, and interventions
- Collected economic, atmospheric, and agricultural data from government and academic sources
- Conducted field visits and interviews in Northern Thailand to identify supply chain issues

Research Assistant, *Morphing Space Structures Lab, Department of Aeronautics and Astronautics*, Stanford University **2023–2024**
Advisor: Manan Arya
Research Area: tessellating origami-inspired deployable structures for space applications
- Investigated geometric properties of flasher structures to identify collapsibility conditions
- Designed and implemented regular and semi-regular tessellated flasher patterns
- Co-authored a peer-reviewed conference paper and delivered an oral conference presentation

Research Assistant, *Hollberg Lab, Department of Physics*, Stanford University **2022**
Advisor: Leo Hollberg
Research Area: low-power atomic clocks for undersea acoustics applications
- Implemented numerical models to predict cesium vapor cell absorption properties
- Designed and conducted experiments to observe vapor cell absorption in lab conditions
- Analyzed experimental results and organized observations in lab notebooks

Publications

N. Jatusripitak and M. Arya, "Regular and semi-regular tessellations of origami flashers," *Origami8: Proc. 8th Int. Meeting Origami in Science, Mathematics and Education*, Melbourne, 2024.

Conference Presentations

N. Jatusripitak and M. Arya, "Regular and semi-regular tessellations of origami flashers." *Society of Engineering Science Annual Technical Meeting* (oral), Minneapolis, MN, 2023.

University Presentations

N. Jatusripitak, "Quantifying Source Contributions to Seasonal PM2.5 Pollution in Northern Thailand." *Stanford Doerr School of Sustainability Undergraduate Research Symposium* (poster), 2024.

N. Jatusripitak, "Regular and Semi-Regular Tessellations of Origami Flashers." *April Symposium of Undergraduate Research and Public Service* (poster), 2024.

N. Jatusripitak, T.A. Nguyen, and U.K. Eren, "Developing a Low-Power Cesium Atomic Clock Using Coherent Population Trapping." *Physics Summer Undergraduate Research Program* (oral), 2022.

Teaching Experience

Head Teaching Assistant, *ECON 52: Economic Analysis III* **Spring 2025**

- Coordinated a team of TAs for a large undergraduate economics course with ∼80 students
- Developed new weekly discussion section materials and instructional slides
- Assisted instructor in writing exams and homework assignments
- Managed grading logistics, exam preparation, and proctoring
- Received strongly positive feedback from students (mean: 4.54/5.00, median: 5.00/5.00)

Teaching Assistant, *ECON 52: Economic Analysis III* **Fall 2024**

- Held discussion sections and weekly office hours
- Assisted in grading problem sets and exams for ∼150 students

Technical Skills

- Programming: Python, R, C/C++
- Data Processing: Google Earth Engine, GeoPandas, NetworkX, OSMnx
- Machine Learning: PyTorch, PyTorch Lightning, scikit-learn
- Optimization: Gurobi