THANAKRIT PIYACHAYAWAT

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Professional Summary

Master's-level industrial engineer pursuing an M.S. in Industrial Engineering at Texas Tech University (**GPA 3.92**). Skilled in optimization, simulation, and algorithmic modeling for manufacturing and logistics. Proficient in Python, Gurobi, and Arena, with a focus on applying operations research to real-world industrial systems.

Education

Master of Science | Industrial Engineering | Expected December 2025 | Texas Tech University, USA – **GPA 3.92**
Master of Engineering | Industrial Engineering | 2017 | Kasetsart University, Thailand – **GPA 4.00**
Bachelor of Engineering | Management and Logistics Engineering | 2014 | Silpakorn University, Thailand – **GPA 3.80** (First-Class Honors)

Publications & Research Highlights.

A two-step evolutionary algorithm for the distributor's pallet loading problem with multi-size pallets | A. Mungwattana, T. Piyachayawat, G. K. Janssens | Flexible Services and Manufacturing Journal Vol.35 (2023), pp. 1256-1275. | DOI: 10.1007/s10696-022-09461-y

- Proposed a hybrid evolutionary algorithm for multi-size pallet loading, achieving **78.5%** faster computation with minimal efficiency loss.
- In real-life tests, cross-sectional area usage was reduced by up to **28%** and computation time by **29** minutes.

Research Interests: Applied operations research | network optimization | production scheduling | supply chain & logistic management.

Academic Projects

Optimizing Airline Maintenance Scheduling | IE 5331: Operations Research in Action | Texas Tech University | 2024

- Built a network-flow mixed-integer programming model to optimize aircraft maintenance for 467 planes across 12 stations using Python–Gurobi.
- Achieved optimal schedules (846 and 1,696 checks for 90- and 180-day horizons) and reduced runtime by **24%** through graph-structure refinement.

Facility Layout Redesign for Chick-Fil-A, Wiggin Complex | IE 5357: Manufacturing Facilities Planning & Design | Texas Tech University | 2024

- Designed a layout optimization plan, addressing restocking delays and congestion through data-driven workflow.
- Projected **$295.66** daily revenue gain (≈$1,774 weekly) with a **6.7**-month break-even period, improving service time and productivity.

Experience

Freelance Programmer & Systems Analysis Assistant | Kasetsart University (Thailand) | 2017 – 2020

- Developed an Arena-based simulation model for a fully automated hard-disk production line, emulating **14** distinct operational stations.
- Supported an industrial consulting team in developing a rule-based green-tea production planning algorithm, improving decision transparency and reducing human error.

Graduate-Level Tutor | 2017 – 2018

- Taught simulation modeling (Arena) and VBA programming for MS Excel to graduate students.
- Ensured conceptual understanding and hands-on competency in industrial engineering applications.

Undergraduate Tutor / Freelance Programmer | Silpakorn University (Thailand) | 2012 – 2015

- Tutored operations research, production planning, and safety engineering courses.
- Designed and implemented small-scale analytical and automation tools for coursework support.

Skills

Optimization & Modeling: Linear / Integer Programming, Network optimization, Heuristic Algorithms, Simulation (Arena/Simio) | **Programming:** Python, Visual Basic, Gurobi | **Research Tools:** LaTeX, MS Excel (Advanced)