

Enrico Laoh, PhD(cand.)

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Educations and Certifications

- **Doctor of Philosophy**, *Industrial Engineering and Management*, Oklahoma State University, Expected 07/2025
- **Master of Science**, *Industrial Engineering and Management*, Oklahoma State University, GPA 4.00/4.00
- **Graduate Certificate**, *Business Analytics and Data Science*, Oklahoma State University, GPA 4.00/4.00

Certifications: [*Tableau Desktop Specialist*](#), [*Amazon SageMaker Studio*](#), [*Amazon Redshift*](#), [*AWS MLOps*](#), [*Six Sigma Green Belt*](#), [*Supply Chain Design*](#)

Experiences

APPLIED MACHINE LEARNING TECHNOLOGY FOR TIME SERIES DATA

JUN - AUG 2025

Advanced Demand Forecasting Model for Airline Industry (*United Airlines, Inc.*)

- Observing the pricing model and understanding the effect of demand forecasting for different products.
- Updating the demand forecasting model and testing novel variables extracted from internal databases and external potential influences.
- Successfully reduced the forecasting MAPE by ~2%.

Skills: *Databases, SQL, Statistical Learning, Visualization and Storytelling, Business Analytics, Customer Segmentation, Product Analytics, Time Series Analysis*

HIGH-STAKE DECISION SUPPORT SYSTEM

JAN 2021 - NOW

Collaborative AI for a Robust Predictive Model (*Oklahoma State University*)

- Developing machine learning models incorporating trust issues for risk-sensitive decision-making.
- Implementing a collaborative AI approach to increase the performance while validating the prediction.
- Designing a continuous human and AI learning framework.
- Testing the model's robustness over different data sets.
- Funded by NIH under a \$ 1.2M research grant.

Skills: *Data-driven Decision Making, Data Wrangling, Machine Learning, Incremental Learning, Continuous Learning, Transfer Learning, Time Series Analysis, Bayesian Analysis, Interpretable and Explainable AI*

ADVANCED STATISTICAL METHODS AND EXPERIMENTAL DESIGN

AUG 2017 - DEC 2020

Transformative Big Data Insight for Industrial Advancement (*University of Indonesia*)

- Designed and implemented experimental research on customer segmentation using advanced clustering methods, demonstrating a solid understanding of statistical methodologies.
- Conducted sentiment analysis on tourism-related data, effectively extracting and communicating actionable insights to drive business decisions.
- Utilized data visualization techniques in multiple studies, implying proficiency with dashboarding tools to present complex data clearly.

Skills: *Large Language Modelling (LLM), Text Mining, Spatial Analysis, Lifetime Value Analysis, Customer Clustering, Sampling Methods, Design of Experiment*

Selected Awards

- **Roy and Virginia Dorrough Distinguished Graduate Fellowship**, Oklahoma State University, 2023, 2024, 2025, Awarded to recognize outstanding graduate students with evidence of exceptional academic performance and achievements, leadership experiences, and notable extracurricular or community engagement activity.
- **Lisa Zaken Award for Excellence**, Institute of Industrial and Systems Engineers, 2024, This international annual award, given only to one winner who has outstanding scholastic achievement, leadership, and dedication to the Industrial and Systems Engineering profession, demonstrates the highest of standards.
- **President Leadership Recognition**, Hargis Leadership Institute, 2024, Awarded for demonstrating exemplary leadership and impact within the university and broader community.
- **Outstanding Graduate Student Award**, CEAT, Oklahoma State University, 2024, Selected as the top graduate student in the CEAT based on academic excellence and research achievements.
- **Robberson Dissertation Fellowship**, Oklahoma State University, 2024, Recognized for outstanding doctoral research contributing to advancements in industrial engineering and data science.

Selected Publications

Metrics: h-index 12 | i10-index 14 | 400 citations per April 2025

Total: 28 published papers | 2 patents (one under review) | 12 granted grants [link](#)

- **Laoh, E.**, Liu, T., "Incremental Learning with Multi-Group Data Stream for Diabetic Retinopathy Prediction" (*working paper*).
- **Laoh E.**, Adelia, F., Zulkarnain, "Temporal Neuron-based Artificial Neural Network Model for Blood Components Demand Forecasting" (*working paper*)
- Dhini, A., Dwi, K., Surjandari, I., **Laoh, E.**, Dzikri, A., "Prediction of LOS for Heart Disease Patient using Ensemble Machine Learning Approach." (*working paper*).
- Khrisnan, D., R., **Laoh, E.**, Liu, T., "Multi-vehicle-pickup-and-delivery problem with time windows and handling costs." (*Submitted to Transportation Research Part B*).
- Bani Ahmad, O., **Laoh, E.**, Liu, T., "Designing a Pruning and Merging Method to Achieve Simple Rules for Diabetic Retinopathy Screening with Routine Lab Results." (*Submitted to Smart Health*).
- **Laoh, E.**, Liu, T., "A Robust and Trustable Approach to Incorporate Medical Domain Knowledge in Machine Learning Models for Diabetic Retinopathy Screening Using Routine Lab Results" (2024) DOI: <http://dx.doi.org/10.2139/ssrn.4950302>.
- Surjandari, I., Dzikri, A., Dhini, A., **Laoh, E.**, Dwi, K., Ferrouzi, D., "Stacked Generalization with Sequential-Model Based Optimization for estimating Used Car Valuation in Indonesia." (2024) Engineering, Technology & Applied Science Research. DOI: 10.48084/etasr.8226.
- Surjandari, I., Yusuf, H., **Laoh, E.**, Maulida, R. "Designing a Permissioned Blockchain Network for the Halal Industry Using Hyperledger Fabric with Multiple Channels and the Raft Consensus Mechanism." Journal of Big Data (2021). Springer. DOI: 10.1186/s40537-020-00405-7.
- **Laoh, E.**, Agustriwan, F., Megawati, C., Surjandari, I. "Internet Traffic Forecasting Model using Self Organizing Map and Support Vector Regression Algorithms." Makara Journal of Technology, Vol 22, No 2 (2018), pp. 60-65. DOI: 10.7454/mst.v22i2.3351.
- Surjandari, I., Wayasti, R.A., **Laoh, E.**, Zulkarnain, Rus, A.M.M., Prawiradinata, I. "Mining public opinion on ride-hailing service providers using aspect-based sentiment analysis." International Journal of Technology, Vol 10, No 4 (2019) pages: 818-828. DOI: 10.14716/ijtech.v10i4.2860.

References

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- **Dr. Sunderesh Heragu**

[PhD, University of Manitoba 1988]
Regents Professor and John Hendrix Chair at
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- **Dr. Farzad Yousefian**

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