(+65) 9773 5875
darrenkhlim@live.com.sg

Lim Kang Heng

Operations Research Analyst

github.com/darrenlimkh
linkedin.com/in/limkangheng

EDUCATION

National University of Singapore, Business Analytics Centre, Singapore Aug 2022 - Sep 2023
Master of Science (Business Analytics), GPA: 4.59 / 5.00
Teaching: IE5202 Applied Forecasting Methods, IND5003 Data Analytics for Sense-making, IE2210 Operations Research

National University of Singapore, College of Design and Engineering, Singapore Aug 2019 - May 2022
Bachelor of Engineering (Industrial and Systems Engineering) with Honours, Minor in Statistics, GPA: 4.96 / 5.00
Awards: Valedictorian, Lee Kuan Yew Gold Medal, IES Gold Medal, Dean's List, Engineering Scholars Programme

EXPERIENCE

DSO National Laboratories, Singapore Sep 2023 - Present
Operations Research Analyst, Military Operations Analysis

- Develop physics-informed machine learning models by combining finite-element simulation and experimental data to predict behaviours within complex physical systems
- Implemented customized scheduling and optimization algorithms (e.g., set cover, sweep line, K-means clustering) to improve resource allocation efficiency and model scalability across operational scenarios
- Conducted Monte Carlo–based simulation studies to quantify risks and evaluate system vulnerabilities, providing data-driven insights to guide acquisition and doctrine development for the SAF
- Collaborate with stakeholders from the Singapore Armed Forces (SAF) to translate operational requirements into analytical and software specifications that enhance operational planning and decision support

SingHealth, Singapore May 2023 - Aug 2023
Data Science Intern, Health Services Research Centre

- Developed an early warning algorithm to detect and predict surge persistence in emergency department attendances, enhancing healthcare resource management for improved patient outcomes
- Co-first authored and published in Healthcare, DOI: https://doi.org/10.3390/healthcare12171751

Applied Materials, Singapore May 2022 - Aug 2022
Industrial Engineering Intern, Industrial Engineering Team

- Migrated from a spreadsheet-based manufacturing capacity planning to a web-based application, offering recommendations for work center requirements to improve manufacturing capacity utilization

Halliburton, Singapore Aug 2021 - May 2022
Industrial Engineering Intern, Continuous Improvement Team

- Developed a heuristics-based optimization algorithm (I.e., CRAFT) to generate manufacturing layout recommendations, improving operational efficiency and cost-effectiveness
- Built an interactive web application enabling users to select recommended layouts from the CRAFT algorithm or manually reconfigure layouts to visualise real-time impact on the manufacturing floor

OCBC Bank, Singapore May 2021 - Dec 2021
Data Science Intern, Artificial Intelligence Lab

- Developed a multi-modal AML/CFT anomaly detection system for cross-border payments, integrating outputs of backend time series forecasting, news sentiment analysis, and clustering pipelines

CASE COMPETITIONS & SKILLS

2025 DSO Challenge - First Runner Up
2022 & 2021 NUS ISE - Micron Business Analytics Case Competition - First Place & Second Runner Up

Programming: Python, C#, VBA, R, SQL

Data Management & Data Visualisation: Pyspark, PostgreSQL, XPath, Tableau, Plotly, Dash, Streamlit

Simulation, Software & Tools: AutoMod, Bitbucket, Confluence, Git, Orange, Vensim

Skills & Expertise: Agile (Scrum, Kanban), Big Data, Cloud Computing, Computer Vision, Database Management, Deep Learning, Machine Learning, Operations Research, Project Management, Time Series Analysis, Web Development

PERSONAL PROJECTS

Stock Investment Decision Support Tool Jul 2025 - Present

- Developed a full-stack web application delivering fundamental and technical analytics for equities
- Integrated financial APIs to compute and summarise key valuation and technical indicators (e.g., PEG, RSI, MACD)
- Built a machine learning classification model trained on historical fundamental and technical features to forecast directional price movement, and provide buy/sell recommendations with confidence probabilities

Federated Learning–Based Breast Cancer Detection Platform Jan 2023 - May 2023

- Built a dockerized full-stack federated learning system for breast cancer detection using ultrasound imaging and clinical data, combining transfer learning (VGG16) and model stacking, with a React frontend, Flask backend, and AWS Elastic Beanstalk deployment