

Idan Lau



GitHub



Website



Google Scholar



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EDUCATION

New York University

B.S. Computer Science, Minor in Math, Graduated a year early

New York, NY

Graduation: May 2025

WORK EXPERIENCE

Comity – Series A, Backed by Caffeinated Capital, Maverick Ventures

Machine Learning Engineer

New York, NY

Jun 2025 – Present

- Early employee and first junior hire, researching quantitative power trading strategies (virtual DART, PTP) in ERCOT
- Analyzed SCUC and SCED solutions to identify modeling improvements in optimal power flow and trading strategy
- Researched point and probabilistic renewable energy forecasting models to improve trading returns and reduce portfolio risk
- Analyzed PTDFs, transmission line flow constraints, and congestion patterns to identify trading opportunities
- Developed outage-handling algorithms using IIR and NRC data to better capture real-time grid conditions
- Improved generator energy offer curve forecasting across multiple fuel types to enhance market modeling accuracy
- Analyzed external participant bidding behavior to identify market trends and help develop trading ideas
- Enhanced backtesting workflows and general research toolings through MLflow, Ray and Anyscale

NYU AI4CE Lab – Supported by NSF, Nokia Bell Labs, Bosch, NVIDIA, GM

Machine Learning Researcher

New York, NY

Apr 2023 – Present

- Authored machine learning paper accepted to the IEEE ICRA (Details in the research section of Resume)
- Researched Visual Place Recognition (VPR) at the intersection of computer vision, deep learning, and autonomous robotics
- Continuing research on spatial transformer sampling, attention regularization and domain generalization
- Developed models in PyTorch and ran experiments on high-performance computing systems

Midas Analytics – Seed Stage, Backed by HKAI Lab, HKSTP

Data Engineering Intern

Hong Kong

Feb 2023 – Sep 2023

- Built Chinese financial news ETL pipeline, orchestrated with Apache Airflow, monitored with Grafana, and stored on MongoDB
- Deployed and maintained Docker-containerized API endpoints on AWS EC2 instances for data consultancy projects
- Improve global entity-tracking scraper using request and proxy-based methods, resolving database issues

RESEARCH

Flexible and Efficient Spatio-Temporal Transformer for Sequential Visual Place Recognition

Proceedings of the IEEE International Conference on Robotics and Automation (ICRA)

Accepted Jan 2026

- First-author research paper accepted to IEEE ICRA 2026, a leading robotics and automation conference
- Developed Adapt-STformer, an transformer-based VPR model well balanced between performance, efficiency and flexibility
- Introduced a novel Recurrent Deformable Transformer Encoder (Recurrent-DTE) for unified spatio-temporal feature learning
- Improved recall by up to 17% while reducing inference latency by 36% and memory usage by 35% over comparable baseline
- Open-sourced model implementations and data generation pipelines, actively supporting other researchers in related research

PROJECTS

LLM Financial Advisor

Won 1st Place at the Cloudera Evolve24 Hackathon

Oct 2024

- Built an LLM-powered portfolio advisor using RAG, Pinecone, and Cloudera AI Workbench for investment recommendations
- Integrated Perplexity AI for financial news, Alpaca API for simulated trading and streamlit as user interface

TECHNICAL SKILLS

Skills: Python, Machine Learning, Deep Learning, PyTorch, Scikit-learn, Statistical Analysis, Optimization, Power Markets, SQL, Snowflake, Ray, MLflow, High-Performance Computing, Slurm, AWS, Docker, Linux, MongoDB, Data Engineering