

Yu Shiuan (Leo) Shr

Scalable AI systems architect with 5+ years of experience in deploying graph-based optimization, agentic AI, and production-grade ML pipelines at TSMC. Specializes in solving high-impact industrial challenges through knowledge graph, multi-modal reasoning, and modular system design.

gogoloso123@gmail.com | +886-976-213-188 | [Linkedin](#) | [Github](#) | [Blog](#)

EXPERIENCE

- **Taiwan Semiconductor Manufacturing Company Limited, (TSMC)** Sep 2023 - Now
Applied Data Scientist - AI application Department
 - **Scalable AI-driven knowledge graph recommendation system:** Designed and developed a memory-enabled, context-aware agentic recommendation system for internal R&D—integrating domain-specific RAG (e.g., GraphRAG), knowledge base orchestration, and in-house jargon retrieval to bridge knowledge silos, accelerate junior onboarding, and prevent redundant component work via architecture-level advisory across teams.
 - **Multi-modality Chart Interpretation system:** Architected and contributed to the development of a scalable VLM+LLM-based chart reasoning module for TunePro, enabling automated anomaly detection and action recommendation across hundreds of real-world process charts. Achieved >90% accuracy across critical chart types (scatter, residual-actual, MDS), reducing manual review overhead and accelerating junior onboarding through reusable visual-data understanding infrastructure.*ML DevOps - Machine Learning Analysis Department*
 - **Massive system design and leadership:** Led the architecture and rollout of a scalable, production-grade retargeting system for wafer zone-level measurements in 2/3nm fabs—designed with modular dispatch/scheduling components and domain-driven design, now operating across 8 fabs (F14–F22), covering >50% of SPC data and saving 233+ engineer-hours per fab per day.
 - **Advanced technical breakthrough:** Designed and led a TSMC-tailored graph-based optimization system that solved TSMC's long-standing cross-station tuning bottleneck, leveraging **GNN modeling and Lemur optimization** to automate parameter tuning for upstream toolchains under 99% real scenario coverage.

Early Technical Experience(2019–2022, Taiwan):

- **Graph-based Anomaly Detection ETL in AML** (Data Analyst - Bitfinex, iFinex. Inc, Remote)
 - Designed and deployed a PageRank-variant graph algorithm to identify suspicious remittance behaviors in AML operations—automating risk detection across 3,500+ accounts per quarter, and demonstrating early expertise in graph-based reasoning and high-volume financial workflows.
- **Data Pipeline Automation & Dashboarding** (Business Intelligence analyst, Bitfinex, iFinex. Inc)
 - Built *end-to-end* operational data pipelines and interactive dashboards for account monitoring, significantly improving cash flow transparency and enabling proactive compliance responses.
- **Transfer Learning & NLP Pipeline Ownership** (Industrial Technology Research Institute, Machine Learning Engineer Intern)
 - Led an NLP classification project using BERT/T5 and random forest models, improving accuracy from 86% to 93%—owning the pipeline from data scraping, preprocessing, modeling to delivery.
- **GCP-based Scalable ELT for Smart Manufacturing** (Micron Technology, Inc, Data Engineer Intern)
Data Engineer Summer Intern, Smart Manufacturing Artificial Intelligence Department. Prob Domain
 - Developed parallelized ELT pipelines on GCP Dataflow + Apache Beam for probe defect analysis, resolving compute bottlenecks in semiconductor workflows and integrating with BigQuery, Snowflake, and NiFi.

EDUCATION

National TsingHua University Hsinchu, Taiwan Sep 2021 - Now
M.B.A., Service Science (Information Management) Institute, Specialized in Information System & Business Analytics GPA 4.0/ 4.3
Data Science Program Certificate Sep 2021 - Aug 2023
Teaching Assistant of Programming of Business Analytics (2022), Business Analytics of Data Mining (2022)
National ChengChi University Taipei, Taiwan Sep 2014 - May 2018
B.A., Economics, class representative of 103 Academic Year GPA 3.59/ 4.0

OpenSource & Extracurricular

- **Google Developer Student Club Hsinchu, Taiwan** Oct 2022 - Now
Technical Product Manager [Web](#) [Github](#)
 - Mentor 11 university student as a team to co-develop a client/server recommendation product with Unity frontend for Google Solution Challenge.

SKILLS SUMMARY

Languages: Python(Proficient), SQL(Proficient), R(Familiar), Ruby(Familiar), PySpark(Medium), Linux(Medium)

Data: Graph, Knowledge Graph, Agentic AI, LLM, OOP, Sync/async high frequency System Design, Domain-driven design,, MinIO, API Gateway, Snowflake, MS SQL, PostgreSQL, Firebase