

# Tien-Ning(Sky) Lee

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## EDUCATION

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**University of California, San Diego (UCSD)** Sep. 2025 - Expected Jun. 2027  
M.S. in Electrical and Computer Engineering (Machine Learning & Data Science Track) California, United States

**National Yang Ming Chiao Tung University (NYCU)** Sep. 2020 - Jun. 2024  
B.S. in Information Management and Finance (Program of Information Management) Hsinchu, Taiwan

## EXPERIENCE

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**Classmethod** Jul. 2026 - Sep. 2026  
*Physical AI Engineer Intern* Tokyo, Japan

- TBD

**Artificial Intelligence Lab, National Taiwan University** Jun. 2024 - Dec. 2024  
*Project Research Assistant* | Advisor: Prof. Tsung-Nan Lin (IEEE Fellow) Taipei, Taiwan

- Co-developed **trustworthy AI recommendation systems** with PhD students for **BankTaiwan Life Insurance**, focusing on minimizing default risk through **anti-recommendation algorithms**.
- Processed large-scale real-world insurance data and **engineered robust features** to enhance model generalization.
- Implemented and evaluated collaborative filtering and **anomaly detection** models using **PyTorch**, optimizing for both ranking accuracy and risk mitigation.
- Collaborated with stakeholders to **officially deploy** the model after successful enterprise testing.

**National Institute of Information and Communications Technology (NICT)** Jul. 2023 - Sep. 2023  
*AI Research Intern* Tokyo, Japan

- Conducted research to enhance the resilience of **model-based network intrusion detection systems (NIDS)** for **IoT devices** by investigating advanced **adversarial attacks** to develop robust defense strategies.
- Engineered and trained diverse NIDS models—including **Logistic Regression, kNN, Random Forest, Autoencoder, 1D-CNN, and 2D-CNN**—using **scikit-learn** and **TensorFlow** on **real-world TON\_IoT datasets**.
- Developed a **SHAP**-guided feature selection algorithm that **reduced input features by 65%** while maintaining model performance and interpretability.
- Investigated adversarial training using **SHAP**-informed attacks, providing key insights that supported NICT researchers' ongoing studies on adversarial training and defense strategies.

## PROJECTS

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**Amazon-SASRec-Engine | PyTorch, FAISS, FastAPI, Streamlit | Full-Stack Deep Recommender System**

- Developed a **full-stack sequential recommendation system** using the **SASRec** (Transformer) model to predict user purchase intent based on interaction history.
- Implemented **FAISS** to achieve **sub-millisecond** inference latency for **real-time** recommendations.
- Designed a decoupled architecture with **Streamlit** (frontend) and **FastAPI** (backend), featuring an oversampling strategy to filter duplicates and ensure consistent top-k results.
- Integrated a real-time web scraper with **BeautifulSoup** as a fallback mechanism to dynamically fetch missing product metadata from Amazon, resolving cold-start display issues.

**Polyglot Sensei | React, FastAPI, Tailwind CSS | Multilingual Reading Assistant Web App**

- Developed a full-stack multilingual assistant with **React** (frontend) and **FastAPI** (backend), enabling users to input text and receive AI-powered translations in multiple languages.
- Integrated **Google Gemini API** to provide accurate translations, vocabulary extraction, and grammar explanations, while implementing translation history tracking to enhance usability and user engagement.
- Built a responsive and modern UI with **Tailwind CSS**, featuring interactive translation cards, a loading state, and real-time updates via **RESTful API** requests.

## SKILLS

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**Languages:** Mandarin Chinese (native), English (fluent), Japanese (business level, JLPT N2)

**Programming Languages:** Python, C++, JavaScript, Java, R, SQL

**Libraries/Frameworks/Tools:** scikit-learn, TensorFlow, PyTorch, React, FastAPI, Alembic, Git, AWS, Render, Docker, ROS2, pytest