Yu-Hsuan (Monica) Ko

Chicago, Illinois, USA | (312) 284-9394 | yuhsuanko@uchicago.edu | linkedin.com/in/yu-hsuan-ko

EDUCATION

University of Chicago **Chicago, Illinois**
Master of Science in Applied Data Science **Sep 2024 - Dec 2025**
Relevant Courses: Big Data and Cloud Computing, Bayesian Machine Learning with Generative AI Applications, Time Series Analysis and Forecasting, Natural Language Processing and Cognitive Computing

National Taiwan Normal University **Taipei, Taiwan**
Bachelor of Business Administration **Sep 2018 - Jun 2022**
Relevant Courses: Advanced Statistics, Calculus, Management Mathematics, Text Mining, Information Management

SKILLS & CERTIFICATIONS

- **Programming Languages:** Python (scikit-learn, PySpark, TensorFlow, Pytorch, transformers), SQL, R, Java, JavaScript
- **Technology Tools:** Google Cloud Platform (GCP), AWS, Azure, Linux, Hadoop, Spark, Hive, Git, Docker, UiPath, Confluence, JIRA
- **ML / DL / LLM:** XGBoost, LightGBM, Random Forest, Natural Language Processing (NLP), Recommendation Systems, CNNs, GPT, LLaMA, crewAI
- **Data Visualization & Statistical Analysis:** Tableau, Neo4j, SAS, SPSS, STATA
- **Certifications:** Certified Anti-Money Laundering Specialist (CAMS), Google Digital Marketing

WORK EXPERIENCE

E.SUN Commercial Bank **Taipei, Taiwan**
Data Analyst, Risk Management Division **Jul 2023 – Sep 2024**
- Designed 3 innovative anti-money laundering (AML) typologies using Python and PostgreSQL to extract and analyze 500M+ transactions from cloud database, automating report generation and reducing false positives from 50% to 20%
- Revamped transaction monitoring system using Python, SAS, and T-SQL to improve AML detection rates by 15% and enhanced 20+ logics for domestic and international systems, optimizing user experience and reducing false positives
- Built machine learning models (Isolation Forest, LightGBM) to identify suspicious transactions in third-party payments and conducted feature selection to improve the efficiency of investigator information gathering from 5 systems
- Created visualized transaction networks using PostgreSQL and Python to uncover complex interconnections across 10+ bank-wide transaction channels, increasing investigator productivity by 30% through network-based analysis
- Deployed 3 robotic process automation (RPA) pipelines with Python to automate systems and API tasks with cross-functional teams, cutting manual work by 95% and saving 600+ hours annually with real-time fraud detection and prevention

The Shanghai Commercial & Savings Bank **Taipei, Taiwan**
Data Scientist Intern, Head Office of Strategic Planning **Mar 2023 – Jun 2023**
- Authored a 90-page Python handbook to empower 100+ non-technical colleagues with self-guided data analysis skills
- Applied machine learning models (K-Means, Decision Tree) for clustering analysis, segmenting customers in the loan market into five distinct groups, resulting in a 20% improvement in targeted marketing efficiency
- Developed an RPA process using UiPath to automatically obtain daily exchange rates from 33 banks for departmental use, which reduced manual processing time from two hours to five minutes

Internal Training Teaching Assistant **Apr 2022 – Sep 2022**
- Instructed 20+ managers and employees in applying machine learning models and programming skills with Python to drive data digitalization and develop new business opportunities and marketing strategies with technology

LINE Taiwan Limited **Taipei, Taiwan**
Data Management Specialist, Customer Care UX Team **Oct 2022 – Feb 2023**
- Optimized a customer service chatbot, labeled user reviews from iOS/Android apps, and improved the natural language classification system, increasing response accuracy by 10%
- Identified initial technical issues from customer chatbot interactions and reported problems to relevant teams, enhancing service quality and boosting customer satisfaction to over 70%

SELECTIVE PROJECTS

Neural Network-Based Detection of AI-Generated Human Images **Feb 2025 – Mar 2025**
- Developed AI-generated human image detection model using CNNs and Bayesian techniques, leveraging pretrained DINOv2 vision transformer, achieving 70% classification accuracy for deepfake and fraud detection applications

Music Recommendation System on Spotify **Feb 2025 – Mar 2025**
- Designed personalized music recommendation system using K-Means clustering 4 groups, popularity prediction (XGBoost, LightGBM, SVM, Logistic Regression), and NLP (Word2Vec, TF-IDF) to analyze audio features, lyrics, and artist metadata, improving recommendation accuracy by 60% and enhancing playlist engagement