Hsun-Yu Kuo

✉ hsun-yu.kuo@epfl.ch | 🏠 hsun-yu.github.io | 🔗 hsun-yu-kuo | 🐦 @HsunYuKuo1

Education

École Polytechnique Fédérale de Lausanne (EPFL) *Lausanne, Switzerland*
M.Sc. IN COMPUTER SCIENCE *Sept. 2024 – Present*
- Coursework: Machine Learning, Advanced Algorithms, Causal Thinking

National Taiwan University *Taipei, Taiwan*
M.Sc. IN DATA SCIENCE *Feb. 2023 – June 2024*
- Paused studies after June 2024 to pursue a master's degree at EPFL
- Coursework: Machine Learning, Natural Language Processing, Statistical Foundations of Data Science (I), Computational Methods for Data Science, Big Data Systems

National Taiwan University of Science and Technology *Taipei, Taiwan*
B.Sc. IN APPLIED SCIENCE AND TECHNOLOGY, MAJOR IN COMPUTER SCIENCE *Sept. 2018 – June 2022*
- Graduated 1st in the program (2022); received 7 consecutive Academic Excellence Awards (2018–2022)
- Coursework: Statistics (I), Probability and Statistics, Discrete Mathematics, Linear Algebra, Calculus (I), Algorithms, Data Structures, Database Systems, Operating Systems, Digital Logic Design, Computer Networks, Webpage Development, Object-Oriented Programming, Introduction to Computers, Value of AI and Data, Introduction to Fuzzy Systems, Machine Learning Foundations

Experience

Max Planck Institute for Intelligent Systems *Tübingen, Germany*
RESEARCH INTERN *June 2025 – Present*
- Under the supervision of Wieland Brendel and Patrik Reizinger
- Exploring out-of-distribution generalisation and extrapolation capabilities

CKIP Lab, Academia Sinica & IR Lab, National Taiwan University *Taipei, Taiwan*
RESEARCH ASSISTANT *Feb. 2023 – June 2024*
- Advisors: Prof. Wei-Yun Ma and Prof. Pu-Jen Cheng
- **Retrieval-Augmented Language Model for Knowledge Graph Completion**: Developed a prompt-based and knowledge-augmented approach, improving MRR from 0.30 to 0.39
- **Prompt-based Learning for Few-shot Crime Prediction**: Built a few-shot multi-class labeling model using prompting; improved F1 score from 76% to 80%
- **Online Data Augmentation for Intent Classification**: Designed an augmentation pipeline; increased micro accuracy from 67% to 72% and macro from 62% to 67%

National Taiwan University *Taipei, Taiwan*
TEACHING ASSISTANT – SYSTEM PROGRAMMING *Sept. 2023 – Jan. 2024*
- Designed and implemented a context-switch simulator using non-local jumps and signals
- Conducted TA sessions and supported 100+ students in understanding key course material

Industrial Technology Research Institute *Taipei, Taiwan*
INTERN *July 2021 – Sept. 2021*
- Engineered short- and long-term load forecasting models for Taiwan Power Company

Taipei Rapid Transit Corporation *Taipei, Taiwan*
BIG DATA INTERN *July 2021 – Sept. 2021*
- Developed a flow prediction system using historical data and weather forecasts
- Optimized database structure and data pipeline for faster retrieval and transfer calculations

Wireless System Lab, NTUST *Taipei, Taiwan*
RESEARCH ASSISTANT *Sept. 2019 – Jan. 2021*
- Advisor: Prof. Chin-Ya Huang
- **Maximum Transmission Continuity (MTC) Scheme**: Designed a dynamic channel allocation method for CBRS networks, improving IoT data transmission continuity
- **Random Linear Network Coding on P4**: Implemented Galois Field arithmetic and coding algorithms in P4; simulated integration with ONOS in Mininet

Publications

Not All LLM-Generated Data Are Equal: Rethinking Data Weighting in Text Classification

ICLR 2025 (Spotlight, top 5.1%)

Hsun-Yu Kuo, Yin-Hsiang Liao, Yu-Chieh Chao, Wei-Yun Ma & Pu-Jen Cheng

Reliable Data Transmission through Private CBRS Networks

arXiv, 2023

Hsun-Yu Kuo, Szu-Yu Liu, Chin-Ya Huang, Yu-Chi Chen & Meng-Hua Xie

Differential Diagnostic Value of Machine Learning–Based Models for Embolic Stroke

Clinical and Applied Thrombosis/Hemostasis, 2023

Hsun-Yu Kuo, T.-W. Liu, Y.-P. Huang, *et al.*

A Normative Study of Modified Spatial Context Memory Test in Middle and Older Individuals

bioRxiv, 2019

Hsuan-Min Wang, Yo-Ping Huang, **Hsun-Yu Kuo**, *et al.*

Honors & Awards

2022	**Honorary Membership**, Phi Tau Phi Scholastic Honor Society of the Republic of China	*Taipei, Taiwan*
2017	**Outstanding Poster Presentation Award (1st Place)**, Kanagawa International Science Forum — Engineering Category	*Kanagawa, Japan*
2016	**Golden Award (1st Place)**, IT Software Solutions for Business, National Skills Competition	*Taipei, Taiwan*

Selected Projects

EPFL ML Course Leaderboard

Lausanne, Switzerland

Tweet Sentiment Classification

Sept 2024 – Dec 2024

- Optimized language models to achieve a top-ranking accuracy of 92.1%, placing 2nd out of 43 teams

NTU NLP Course Leaderboard

Taipei, Taiwan

Few-Shot Classification of Regulations for Unlawful Ads

May 2023 – June 2023

- Optimized language models to achieve a top-ranking macro F1 score of 72%, placing 1st out of 111 participants

University Research Project

Taipei, Taiwan

Differential Diagnostic ML Models for Embolic Stroke

Jan 2023 – Dec 2023

- Built CNN models with data augmentation (flipping, contrast) on DWI scans to distinguish CAT vs. AF-related strokes

Normative SCMT Study

Taipei, Taiwan

3D Game-based Spatial Context Memory Test

Jan 2023 – Dec 2023

- Developed a Unity-based 3D test to diagnose amnestic mild cognitive impairment in middle-aged and older adults

National High School Science Fair Project

Taipei, Taiwan

EEG Analysis with Neural Networks

Jan 2017 – June 2017

- Analyzed EEG signals using deep learning and wavelet transforms to study brain wave patterns

Taiwan International Science Fair

Taipei, Taiwan

Pneumatic Assistive Device for Hand Rehabilitation

Sept 2016 – Jan 2017

- Designed a pneumatic silicone assistive device using muscle sensors and control algorithms to improve hand mobility

Skills

Programming Languages	C/C++, Python, Java, JavaScript, C#, SQL, HTML, CSS, Git
Machine Learning Frameworks	PyTorch, TensorFlow, Huggingface, Ray
Software & Hardware Tools	Arduino, Android Studio, Xamarin, .NET, MySQL, MSSQL, Unity