

# Shu-Yu Lin

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## EDUCATION

### National Central University

BS in Computer Science & Information Engineering

Overall GPA: 3.98 / 4.30

Relevant Coursework: Artificial Intelligence, Natural Language Processing, Computer Vision, Quantum Computing

Taoyuan, Taiwan

Sept. 2019 - June 2023

## TECHNICAL SKILLS

**Language:** Python, C/C++, C#, Java, MATLAB, SQL (SQLite, MySQL), Bash, HTML, CSS

**Machine Learning:** PyTorch, Keras, OpenCV, Scikit-Learn

**Tools:** Git, Docker

## WORK EXPERIENCE

### Web Intelligence & Data Mining Lab, NCU

Research Assistant / Teaching Assistant | Advisor: Prof. Chia-Hui Chang

Taoyuan, Taiwan

Sept. 2021 - June 2023

- Performed paper reviews, data collection & analyze for projects on NLP, computer vision & time series forecasting
- Coauthored paper in space weather forecasting, led NSTC project on spatiotemporal graph & collaborated with 2 researchers in special project competition about legal texts
- Mentored 4 engineers in fundamental machine learning for special project competition

### P-Square Inc.

Embedding Engineer

Remote

June 2022

- Enhanced the accuracy of car plate recognition (CPR) by 10% through Hough Transform
- Conducted testing by Pytest framework & introduced CPR service to customer-end devices

## RESEARCH EXPERIENCE

Lin, C., Shih, C., **Lin, S.**, Yeh, C., Huang, Y., Hwang, F., & Chang, C. (2023). *Forecasting of global total electron content with multi-day lead time using transformer-based neural networks*. Space Weather, 2023SW003579RR.

- Developed forecasting model achieving 0.54 TECU RMSE on CODE dataset, surpassing existing models performance
- Designed an algorithm to automatically label magnetic storm events, eliminating human labeling errors
- Curated space weather data to construct 20-year public dataset for space weather researchers
- Enhanced communication & interdisciplinary cooperation skills with space weather & mathematics researchers

## PROJECTS

### Unified Modeling Language (UML) Editor

Personal side project in the class of object-oriented Analysis & Design

Taoyuan, Taiwan

Feb. - June 2023

- Developed software tool tailored for the creation, modification & visualization of UML diagrams for designing software systems employing Model-View-Control, Factory & Singleton design patterns

### Self-play Board Game

Personal side project in the class of Network & Database Programming

Taoyuan, Taiwan

Sept. 2022 - Jan. 2023

- Developed self-play machine for the game of 2048 by leveraging Proximal Policy Optimization, reinforcement learning method, using Gym framework & PyGame visualization

### Application of Deep Learning in Legal Texts

Undergraduate Researcher, Web & Data Mining Lab | Advisor: Prof. Chia-Hui Chang

Taoyuan, Taiwan

Sept. 2021 - May 2022

- Developed chatbot equipped predicting Taiwan criminal law from situation description & news promotion with selenium
- Devised hierarchical model for rhetorical role labeling from legal judgments

## AWARDS & HONORS

Undergraduate Research Fellowship, National Science & Technology Council, TW

July 2022 - Jan. 2023

2nd Place, EECS College Special Topic Competition

June 2022

3rd Place, CSIE Department Special Topic Competition

Sept. 2022

## CERTIFICATION & LANGUAGE

Collegiate Programming Examination, TW: 4 / 7 problems, 5% among 2300+ participants

TOEFL: 104 (R:27, L:30, S:22, W:25)