Tzu-Hsuan Lin

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EDUCATION

Master of Science in Computer Science May 2023 (Expected)
University of Southern California, Viterbi School of Engineering **Los Angeles, CA**

Bachelor of Science in Computer Science and Information Engineering Jan. 2021
National Central University **Taoyuan, Taiwan**
Honors GPA: 3.95/4.0

- 11th place (out of 94 groups), National Intelligent Innovation and Creation Contest, Ministry of Education, Taiwan
- 4th place (out of 51 groups), Competition of Special Project, Department of CSIE, NCU, Taiwan

Relevant Coursework: Natural Language Processing, Internet of Things, Computer Vision, Pattern Recognition

INTERNSHIP EXPERIENCE

Associate Back End Engineer, Research and Development July 2020-Dec. 2020
NextDrive Company, Taiwan

- Worked with four colleagues on designing and testing APIs for IoT products in TypeScript, PostgreSQL, and MySQL
- Deployed backend system of an IoT operating webpage to AWS
- Completed three projects in groups. Self-studied Jira and Docker, ensured APIs fit product features, reviewed codes, and improved performance

RESEARCH EXPERIENCE

Advanced Computing and Networking Lab Aug. 2019-Jan. 2021
National Central University, Taiwan

- Worked with a group of three on designing web-based machine learning modeling construction assistant
- Implemented four applications of Autoencoder, including dimensionality reduction, image denoising (DAE), feature extraction, and anomaly detection (VAE)

PUBLICATION

Lin, Tzu-Hsuan, and Jehn-Ruey Jiang. "Anomaly Detection with Autoencoder and Random Forest." *2020 International Computer Symposium (ICS)*. IEEE, 2020.

ACADEMIC PROJECTS

Hierarchical Discourse-level Structure for Fake News Detection Dec. 2020-Jan. 2021

- Implemented Bidirectional LSTM with Multi-Head Attention and Transformer
- Achieved a high accuracy rate of 80% for fake news detection

Fruit and Vegetable App June-Oct. 2020

- Led a team of four to classify fruit and vegetable using CNN MobileNet and scrap market prices with web crawler
- Received 11th place in a national contest in Taiwan

Web-based Time Series Anomaly Detection Feb.-May 2020

- Implemented an anomaly detection method using Variational Autoencoder in Python
- Developed a user-friendly web page that allowed people without a background in machine learning to apply anomaly detection to any dataset
- Customized training parameters for users, such as activation functions, optimizers, and epochs
- Received 4th place in a schoolwide contest in NCU

Smart Chair Sensor Oct.-Dec. 2019

- Built a real-time system with four parts, including pressure sensor and Bluetooth sensor, Firebase, machine learning model, and webpage
- Analyzed average waiting time for vacancies with LSTM model

SKILLS

- Programming Languages: C++, Python, MATLAB, Java, and Assembly Language
- Frameworks & Libraries: TensorFlow, Pandas, OpenCV, PyTorch, scikit-learn
- Languages: Mandarin (Native), English (Fluent), Spanish (Beginner)