Tzu-Hsuan Lin

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EDUCATION

University of Southern California, Viterbi School of Engineering **Los Angeles, CA**

Master of Science in Computer Science, GPA: 3.73/4.0 May 2023 (Expected)

Relevant coursework

- Analysis of Algorithms, Database Systems, Web Technologies, Information Retrieval and Web Search Engines, ML for DS

National Central University **Taoyuan, Taiwan**

Bachelor of Science in Computer Science and Information Engineering, GPA: 3.95/4.0 Jan. 2021

Honors

- 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

WORKING EXPERIENCE

NextDrive Company **Taipei, Taiwan**

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

- Worked with colleagues on designing and testing APIs for IoT products in JavaScript, TypeScript, PostgreSQL, and MySQL
- Constructed back-end system of an IoT operating webpage and deployed to AWS
- Completed three projects in groups, self-studied Docker, Kubernetes, Jenkins, and Jira
- Ensured APIs fit product features, reviewed codes, and improved performance

ACADEMIC PROJECTS

Yelp Review Mobile App Nov. 2022-Jan. 2023

- Utilized Swift language, Xcode, and IOS App development
- Practiced the Model-View-ViewModel (MVVM) design pattern
- Managed third-party libraries through Swift Package Manager

Yelp-like Web Service Oct. 2022-Nov. 2022

- Implemented Server-side Scripting using Python, Flask, JSON, AJAX, and Yelp Fusion API
- Deployed the website using Google Cloud Platform
- Used Angular, Bootstrap, Node.js

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

- Implemented Bidirectional LSTM with Multi-Head Attention and Transformer
- Studies on various versions of NLP models, such as BERT, DistilBERT and ELECTRA
- Achieved an accuracy rate of 80% for fake news detection

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 in TypeScript that allowed people without a background in machine learning to apply anomaly detection to any dataset

RESEARCH EXPERIENCE

National Central University **Taoyuan, Taiwan**

Advanced Computing and Networking Lab Aug. 2019-Jan. 2021

- Led a group of four 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, T.-H.; Jiang, J.-R. Credit Card Fraud Detection with Autoencoder and Probabilistic Random Forest. *Mathematics* 2021, 9, 2683. https://doi.org/10.3390/math9212683

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

SKILLS

- Programming Languages: C++, Python, Java, JavaScript, TypeScript, MATLAB, R, Assembly Language, Swift
- Frameworks & Libraries: TensorFlow, OpenCV, PyTorch, scikit-learn, Django, Vue.js, Express.js, Bootstrap, Flask, Angular
- Languages: Mandarin (Native), Spanish (Beginner)