Zhenhan Lin

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Education

University of Florida — Florida, US
Master of Science in Electrical and Computer Engineering — *Aug. 2022 – Present*

- **GPA**: 3.78/4
- Herbert Wertheim College of Engineering Achievement Awacondard Scholarship (2022)

Hangzhou Dianzi University — Hangzhou, CN
Bachelor of Engineering in Computer Science and Technology — *Sept. 2018 – Jun. 2022*

- **GPA**: 85.14/100
- University Third Scholarship (2019 & 2021)
- Foreign Exchange Scholarship (2020)

University of Pennsylvania — Philadelphia, US
USIEA Technology, Innovation & Global Leadership Program — *Oct. 2018 – Jan. 2019*

Research Projects

Millimeter-Wave Circuit Autorouting and Automatic Layout — Oct. 2021 – Apr. 2022
Hangzhou Dianzi University — *Hangzhou, China*

- Conducted the project on connecting design modules through two or more routes when designing an analog circuit that satisfied the two circuit requirements: (1) the amplitude at the output of all routes is equal to or different from the specified value; (2) minimize the total loss of routes;
- Proposed to utilize the **multi-agent reinforcement learning** algorithm for autorouting in complex circuits;
- Responsible for algorithm investigation and pre-model processing;
- Collaborated to complete the script control environment for layout design;
- Completed the script control environment for layout design and the engineering algorithm in Python.

Study on Fatigue Driving Detection System based on EEG — Sept. 2020 – Jun. 2021
Hangzhou Dianzi University — *Hangzhou, China*

- Utilized MATLAB to read EGG data set and mapped channel positions to 2D coordinates;
- Researched papers on related topics and reproduced the classification effect achieved by a paper that used LSTM algorithm to build a classifier;
- Participated in the construction of the framework of EEG-TPCT-TCN classifier with Pytorch.

Application of Artificial Intelligence Algorithm in Palletizer Scene — Sept. 2020 – Jan. 2021
Hangzhou Dianzi University — *Hangzhou, China*

- Participated in the implementation of cargo identification system based on SSD algorithm and the optimization of existing 2D online packing algorithm; achieved an accuracy rate higher than 99%;
- Simulated the implementation of edge computing module palletizing action in robot arm embedded system;
- Responsible for sorting out the experiment materials and completing the report.

Projects

The Algonauts Project 2023 — May 2023 – Jun. 2023

- Tried and analyzed the performance of different pre-trained image processing models against encoding model;
- Proposed and completed a dual generation system, train ViT-AE on image dataset, and explore the performance of a **Gaussian mixture model-Variational Autoencoder(GMM-VAE)** on generating voxels sequences;
- Implemented a Multilayer Perceptron (MLP) following pre-trained image feature extraction models for improved feature integration. Conducted separate training for MLP parameters before fine-tuning the whole model;
- Compare and dissect the performance and their reasons of the above two methods.

Causal Recurrent Variational Autoencoder for Climate Data — Jan. 2023 – Mar. 2023

- Utilized the Causal Recurrent Variational Autoencoder (CRVAE) model to analyze climate data, identifying the optimal range for the key sparsity-α parameter;

- Reviewed scholarly articles on generative models for time-series data to discover and implement model optimization techniques.

Musical Genre Classification from Audio Samples Dec. 2022

- Contributed to the development of a **multi-label classifier** architecture, with a primary focus on distinguishing between prog-rock and other music genres. This project entailed constructing a baseline model, investigating the impact of various pre-processing features, and exploring the role of different layers in enhancing classification accuracy.

Awards

Provincial Second Prize, National College Students Mathematical Contest in Modeling (TOP 15%) Oct. 2021

Meritorious, The 9th Certificate Authority Cup International Mathematical Contest in Modeling (TOP 10%) Jan. 2021

Third Prize, The 2nd "Yueya Cup" Electronic Design Contest Jun. 2020

Provincial Second Prize, Zhejiang Physics Innovation Competition Theory Competition Dec. 2019

Technical Skills

Language: Python, C, MATLAB, Java

Framework: PyTorch, TensorFlow

Tools&Platforms: Linux, Git, Github, GitLab