Yuyu (Isaac) Zeng

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EDUCATIONAL BACKGROUND

2020.09-2024.06   **Harbin University of Science and Technology**

Major: Information & Computation Science   *Degree: Bachelor of Science*

GPA: 3.29/4.0

Major courses: Probability Theory and Mathematical Statistics, Complex Variables and Integral Transformation, Numerical Analysis, Data Mining.

Minor: Finance   *Degree: Bachelor of Science*

GPA: 4.17/5.0

Major courses: Economics, Finance, Accountancy, Financial Management, Financial Engineering, Marketing.

2023.09-2023.12   **University of California, San Diego**

University and Professional Studies (UPS) Program

GPA: 3.77/4.0

Major courses: Ubiquitous Computing, Recommender System & Web Mining, Systems for Scalable Analytics.

2024.08-Present   **Case Western Reserve University**

Major: Systems Biology & Bioinformatics   *Degree: Master of Science*

RESEARCH PROJECTS

2024.07-2024.10   **Research On Cancer Fitness Landscape**

Student Research Assistant (Supervisor: Dr. Christopher McFarland)

- Clean the CCLE dataset, identify the impact of the essential genes to the whole dataset.
- Replicate a clustering method.

2023.03-2024.01   **Research On Health Prediction of Lithium Battery Based On Deep Learning**

Student Research Assistant (Supervisor: Dr. Wei Xie)

- Collect and preprocess data related to lithium battery charging and discharging, including current, voltage, temperature, and capacity.
- Analyze the collected data to identify patterns and trends in lithium battery behavior.
- Develop a novel data distillation technique to address the challenges of limited data availability and model size.
- Develop a neural network model for predicting lithium battery behavior based on the processed data.
- Develop a loss function based on Stochastic Process and Inverse Problem to improve the performance and the interpretability of the model.
- *Contributed to draft a manuscript of journal paper (A Knowledge Distillation based cross-modal learning framework for the lithium-ion battery state of health estimation).*

2022.02-2022.12   Research On Early Warning Of Financial Risk Of Listed Companies Based On Deep Learning

Student Research Assistant (Supervisor: Dr. Yu Zhang)

- Incorporated the attention mechanism into the prediction model to improve its performance in identifying financial irregularities.
- Modified the model structure to optimize its suitability for processing structured financial data.
- *Contributed to draft a manuscript of journal paper (Violation Detection Based on a Modified Transformer Encoder Network with Bi-LSTM).*
- *Contributed to an Invention Patent (Financial Irregularity Warning Methods Based on Improved Transformer).*

2022.01-2022.04   **Artificial Intelligence-Deep Learning Application Research**

Student Research Assistant

- Attained a comprehensive understanding of machine learning theory, applications, and technologies.

- Developed expertise in neural network architectures and their practical applications.
- Gained hands-on experience in implementing neural network models using TensorFlow and explored and build applications involving TensorFlow, particularly in the context of neural network development.
- *Contributed to draft a published conference paper (Skin Cancer Detection Based on Hybrid Model by Means of Inception V3 and ResNet50)*

PATENT

Zeng Yuyu, Financial Irregularity Warning Methods Based on Improved Transformer, Invention Patent, Patent Application Number: 202210611970.X

PUBLICATIONS

Wei X., **Zeng, Y.** A Knowledge Distillation based cross-modal learning framework for the lithium-ion battery state of health estimation. [Complex & Intelligent Systems. SCI. JCR: Q2. Published. DOI: 10.1007/s40747-024-01458-4]

Zhang, Y., **Zeng, Y.,** Zhu, X., and Gao, L. Violation Detection Based on a Modified Transformer Encoder Network with Bi-LSTM. [Preprinted. DOI: 10.22541/au.167059997.74750948/v1]

Zeng, Y., Zhu, X. (2023) Skin Cancer Detection Based on Hybrid Model by Means of Inception V3 and ResNet50. [EI. Published. DOI: 10.2991/978-94-6463-040-4_42]

SKILLS

- Proficient in Python, Java and familiar with other basic programming languages.
- Capable of mathematical simulation and calculation using Python/Matlab/Mathematica.