TIANYI LI

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ACADEMIC HISTORY

University of Michigan, *Ann Arbor, U.S.* *Sep. 2020 - Jul. 2022 (expected)*

- B.S. in Computer Science *(Minor in Mathematics)*
- GPA: 3.96/4.00

Shanghai Jiao Tong University, *Shanghai, China* *Sep. 2018 - Jul. 2022 (expected)*

- B.S. in Electrical and Computer Engineering
- GPA: 3.61/4.00

RESEARCH EXPERIENCE

LLEX Research Lab - University of Michigan *Ann Arbor, U.S.*
Supervisor: Prof. Paramveer Dhillon and Prof. Daniel Romero *Jan. 2021 - Present*
Data-driven Predictive Methods for Massive Biographical Data

- Developed an automatic scheme on integration and maintenance of a NoSQL Database on global demographics.
- Implemented parallel computing algorithms and achieved a 5x acceleration.
- Proposed deep learning methods to predict individuals' demographic features, achieving an accuracy of 83%.
- Participated in paper writing (10%) and primary data analysis (50%).

Peisen Lab - Shanghai Jiao Tong University *Shanghai, China*
Supervisor: Prof. Peisen Huang *May 2021 - Aug. 2021*
Vision-based Absolute Planar Encoder for High Precision Measurement

- Embedded an auto-resizing pattern encoder based on the de Bruijn Algorithm.
- Accomplished a corresponding decoder using Computer vision and DFT phase estimation, reaching a resolution of 1mm.
- Realized a 3D reconstruction based on the encoder-decoder orientation.

Yifeiyao Lab - Shanghai Jiao Tong University *Shanghai, China*
Supervisor: Prof. Yifei Yao *Mar. 2020 - Oct. 2020*

- Established traditional ML and deep learning models on ultrasonic images to detect Carpal Tunnel Syndrome (CTS).
- Developed an image segmentation method on the sonographs of the median nerves for morphological feature extractions.
- Reached an accuracy of 87% in the syndrome diagnoses on direct images.

Mode Disorder Lab - Shanghai Mental Health Center *Shanghai, China*
Supervisor: Dr. Shen He *Mar. 2021 - May 2021*

- Established a series of statistical models on depression diagnoses based on gene expressions using R.

- Pinpointed crucial key genes that dominates the mental disorder via multivariate regressions.
- Reached 0.832 AUC from the final model.

Peer-logic Lab - North Carolina State University *Raleigh, U.S.*
Supervisor: Edward F Gehringer *Jan. 2020 - Feb. 2020*

- Accomplished a variety of models based on NLP, deep learning and BERT to detect problem statements in peer assessments.
- Reached a performance of 93.1% accuracy in peer assessment detections.
- Applied transfer learning to investigate connections between different subjects.

SELECTED PROJECTS

Establishing an AlphaGo-Enlightened Master of Reversi
Side Project. Dec. 2020 - Jan. 2021

- Developed a model using MCTS and deep learning to master the game Reversi, referring to the working principle of AlphaGo Zero.
- Applied transfer learning to enable the modified models to master tic-tac-toe and five-in-a-row.

Prediction on Lifetime of Aeroengines
Contestant. Mar. 2020 - May 2020

- Researched on remaining lifetime predictions for aeroengines based on a time-sequential dataset consisting of engine's power settings (TRA), working temperatures, etc.
- Established a combinatorial model of BiLSTM-based supervised learning and clustering-based unsupervised learning to solve the problem.

TEACHING EXPERIENCES

SU19 Physics Lab I *Teaching Assistant*, Shanghai Jiao Tong University
FA20 Physics Lab II *Teaching Assistant,* Shanghai Jiao Tong University

AWARDS AND HONORS

2021 **University Honors**, University of Michigan
2021, 2020 **Dean's List**, University of Michigan
2021, 2020 **Annual Teaching Assistant Nomination**, Shanghai Jiao Tong University
2020 **Excellence Award of Aeroengine Lifetime Predictions**, Foxconn

ACADEMIC SKILLS

- Basic Languages: Python, C/C++, C#, Java, R, Matlab, JavaScript
- Web systems: HTML, JavaScript, Flask, REST API, Fetch
- Database management: SQLs, Hadoop, NoSQL, SparQL
- Machine learning related: Tensorflow, Pytorch, Hugging Face, OpenCV, NLTK, CUDA Programming