Jiayu Chen

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EDUCATION

University of Michigan – Shanghai Jiao Tong University Joint Institute (UM-SJTU) **Aug. 2021 – Jun. 2025E**

Bachelor of Engineering in *Electrical and Computer Engineering* *Shanghai, China*

University of Michigan **Aug. 2024 – Jun. 2026E**

Master of Science in Information, Big Data Analysis *Ann Arbor, United States*

Master of Science in Electric and Computer Engineering

Technische Universität Berlin **Dec. 2024 - Jan. 2024**

Winter Program, Gaming for Virtual and Augmented Reality *Berlin, Germany*

WORKING EXPERIENCE

Software Algorithm Engineer (Intern) **Jan. 2024 - Aug. 2024**

Shanghai Taize Semiconductor Co., Ltd. *Shanghai, China*

- Designed and enhanced virtual environments for Chinese Chess and Guandan, modularizing the game environment, player observations, and decision-making processes to ensure scalability and maintainability
- Developed baseline player agents using rule-based logic and implemented advanced smart agents trained with deep reinforcement learning techniques, with a focus on Monte-Carlo method
- Conducted feature engineering inspired by human strategies, improving training efficiency by 8x, achieving a 90% winning rate against previous models under equivalent training computation. Equipped agent model with human-like strategies and tactics, including actions such as covering allies and value-based decision-making

RESEARCH EXPERIENCE

Performance Characterization for Cloud-based EDA Tools **Aug. 2023 – Jan. 2024**

Advisor: Prof. Xinfei Guo, SJTU Circuits, Architectures, and Systems Lab *Shanghai, China*

- Developed and executed shell and TCL scripts to facilitate the operation of open-source EDA(Electronic Design Automation) tools, Yosys, OpenSTA, and OpenROAD, across various simulated cloud machine configurations
- Innovated a method to monitor computation performance in individual stages among the EDA workflow, enabling performance analysis across 8 distinct sub-stages, contributing to an automated streamlined process
- Conducted a comprehensive performance evaluation and statistical analysis on computing resources in 15 benchmark designs, providing a detailed analysis of the relationship between each EDA stage and the requisite computing resources and time, with insights from CPU organization level

SELECTED PROJECTS

Semi-Supervised Learning in Financial Sentiment Analysis **Jan. 2025 – Mar. 2025**

- Proposed a semi-supervised training framework that integrates labeled data with unlabeled text, leveraging a self-training mechanism and confidence-based filtering to address the scarcity of labeled financial news, achieving an F1-score of 85.2%, a 23% improvement over purely supervised learning.
- Collected 20,000 real-world financial news articles and generated synthetic data using a locally deployed large language model, constructing a high-quality training set through semantic similarity filtering. In a cold-start scenario (5% labeled data), model accuracy improved from 65% to 82%.
- Trained domain-specific word embeddings using financial text corpora to address semantic biases in general-purpose models when interpreting financial terminology.
- Enhanced financial text representation based on the BERT architecture, demonstrating significant improvements in accuracy, F1-score, and pseudo-label confidence over traditional bag-of-words models.

TECHNICAL SKILLS

Programming Languages: Python, C++, C, shell, TCL, Verilog

Framework & Tools: Git, mySQL, Unity, Vim, Tableau, MATLAB

Operating System: Linux, MacOS, Windows