Michael Lee

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Education

The University of Texas at Austin , M.S. in Computer Science — Aug 2024 – Current

- GPA: 4.0
- **Coursework:** Natural Language Processing; Deep Learning; Planning, Search, and Reasoning Under Uncertainty

University of California - Irvine, B.A.s in Business Economics and International Studies — Sep 2018 - Jun 2022

- **Coursework:** Applied Econometrics; Managerial Economics; Statistics; International Business

Experience

Full Stack Software Engineer, Apero Health – San Francisco, CA — May 2023 – Jul 2023

- Designed and implemented a dynamic forms builder, enabling healthcare clients to generate HIPAA-compliant forms with ease
- Reduced legacy code duplication by 80% by overhauling the production frontend UI to use a centralized custom component library
- Improved data consistency and user experience by implementing cache invalidation to automatically refetch relevant data upon server updates

Research

Enhancing Natural Language Inference Robustness Through Adversarial Dataset Fine-Tuning — Dec 2024

- Investigated dataset artifacts in NLI models and fine-tuned an Electra-small model with adversarial datasets, achieving an 8.09% accuracy increase on out-of-distribution data, highlighting improved robustness and generalization.

Projects

Lister — github.com/WhirlyFan/Lister

- Built a full-stack clone of MyAnimeList with features for live chat, followers, anime lists, and reviews using JavaScript, React/Redux, Python, Flask, SQLAlchemy, and HTML/CSS
- Integrated a third-party API to retrieve and display detailed anime information
- Implemented real-time communication via web sockets to enable live chat between users

PySuperTuxKartAI — Nov 2024

- Developed an AI for PySuperTuxKart, a kart racing game, using three separate machine learning models to enable autonomous driving
- Implemented a multi-layer perceptron and a transformer model to process track data points, establishing the kart's relative position between lane borders
- Built a convolutional neural network to process game images, enabling the AI to drive using visual input rather than track data

Search-Based and Adversarial Planning for End of the Track — Oct 2024

- Built a Python planner for the board game, implementing state validation, action enumeration, and BFS to find actions and solve configurations
- Implemented adversarial algorithms like minimax and alpha-beta pruning for AI gameplay
- Designed heuristics to optimize state evaluation and multi-step strategies

Technologies

Languages: Python, JavaScript, TypeScript, HTML/CSS, SQL

Technologies: React, Vite, Redux, Express, Apollo, GraphQL, Django, Flask, Git, PostgreSQL, PyTorch