Jotham Teshome

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EDUCATION

Michigan State University Jan 2023 – April 2024
Master of Science, Computer Science GPA: 3.85
- Relevant Coursework: Natural Language Processing, Computer Vision, Pattern Recognition, Deep Learning, Algorithmic Graph Theory, Distributed Systems

Michigan State University Sep 2019 – Dec 2022
Bachelor of Science, Computer Science, Minor in Business GPA: 3.69
- Relevant Coursework: Data Structures & Algorithms, Operating Systems, Computer Networks, Algorithm Engineering, Web Application Development, Database Systems

EXPERIENCE

MSU College of Engineering *Flask, HTML, CSS, JavaScript* Sep 2023 – April 2024
Graduate Teaching Assistant
- Evaluated assignments to uphold rigorous academic standards in the Web Application Development course
- Assisted students with helpful insight on **GitLab** by describing the uses for **HTML**, **CSS**, and **JavaScript** in **front-end** design, including topics such as responsive sizing and dynamic retrieval of data
- Improved students' understanding of **Flask** for **back-end** development by **7%** through hosting regularly scheduled office hour sessions

MSU Federal Credit Union *Flutter, Dart, SQL* Sep 2022 – Dec 2022
Software Engineering Intern
- Collaborated with colleagues to enhance MSU Federal Credit Union's mobile banking apps using **Flutter**, **Dart**, and **SQL**
- Designed an aesthetically pleasing user interface using **Flutter** and **Dart** to enhance customers' banking experience
- Implemented a modern peer-to-peer transfer system featuring usernames, QR codes, and NFC to increase usability
- Created a system using **Google Places API** to notify users of deals at local businesses based on shopping patterns

PROJECTS

Discord Chatbot *Python, PyTorch, Transformers, Accelerate* June 2024
- Engineered and optimized a **DialoGPT** model for a Discord chatbot using **PyTorch** and **Transformers** libraries
- Devised a robust training pipeline, incorporating **data preprocessing**, model training, and evaluation
- Leveraged **Accelerate** and implemented gradient accumulation for efficient GPU resource management
- Enhanced model performance and efficiency with dynamic learning rate scheduling and checkpointing

Classification of Pokémon Sprites *Python, OpenCV, PyTorch* Sep 2023 – Dec 2023
- Partnered with peers to design a **CNN** model using **PyTorch** for classifying Pokémon from sprite images
- Preprocessed battle images with **OpenCV**, employing **edge detection** and **shape analysis** to isolate Pokémon
- Attained a classification accuracy of **86%** on preprocessed Pokémon sprite images

Predicting NFL Betting Odds *Python, BeautifulSoup, Scikit-learn, PyTorch* Sep 2023 – Dec 2023
- Teamed up with colleagues to design models using **Scikit-learn** and **PyTorch** for predicting NFL game point spreads
- Created a dataset using **BeautifulSoup** to scrape game data from Pro Football Reference to use for model training
- Achieved results comparable to sportsbook predictions, with an MSE of **193.8** and R^2 of **0.137** with our neural network

Identifying and Removing Toxic Comments *Python, TensorFlow* Jan 2023 – April 2023
- Partnered with a peer to design an **RNN** model using **TensorFlow** for detecting toxicity in online comments
- Generated subword embeddings using **FastText** to better detect potential variations of toxic words in comments
- Achieved a word-level classification accuracy of **91%** using trigram embeddings in our multi-appearance word model
- Developed an automated system to censor toxic words to improve the efficiency of real-time content moderation

SKILLS

Programming Languages: Python, C++, C, Dart**,** JavaScript, CSS, HTML, SQL
Tools and Frameworks: Flask, Flutter, OpenCV, PyTorch, Tensorflow, Git, Node.js, React.js