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Jason Vu

github.com/jasuovu   jasuovu.github.io

EDUCATION

University of Technology Sydney   **Feb 2025**
Bachelor of Computing Science (Honours), major in Enterprise Systems Development
- **Awards**: Dean's List (2024), First Class Honours, High Distinction Average (**WAM: 85.47**)
- **Relevant Coursework:** Data Structures & Algorithms, Software Development, Data Analytics, AI, Networking, Cloud

EXPERIENCE

Honours Researcher – Machine Learning & AI   **Feb 2024 – Nov 2024**
University of Technology Sydney
- Contributed to UTS Artificial Intelligence research by developing a transfer learning framework for deep reinforcement learning (RL), applied to Street Fighter II and Fatal Fury 2
- Achieved a **99/100 thesis mark** for optimizing a reinforcement learning algorithm, under the supervision of a Postdoctoral Researcher and was cross-reviewed and validated by the FEIT Director of Education
- Engineered an AI agent from scratch to analyse game strategies, optimizing decision-making processes that attained an 83% win rate over 100 games in Street Fighter II, outperforming baseline models (52%)
- Validated cross-game transfer learning by fine-tuning the agent on Fatal Fury 2, maintaining a 77% win rate, demonstrating retention of learned strategies
- Optimized training over 5 million timesteps using Optuna, reducing convergence times while analysing game similarity and frame-level action spaces
- Utilised Python, Stable-Baselines3 with PyTorch and OpenAI Gym to train and simulate environments locally, scaling computation with cloud GPUs via UTS iHPC (High Performance Computing) on Linux VM for efficient training
- You can access my full thesis paper **here**

PROJECTS

Personal Website: *https://jasuovu.github.io (for more projects and information)*

NLP Sentiment Analysis for Movie Reviews – Paper
- Conducted a machine learning-based sentiment analysis on 1,000+ critics' and audience reviews as part of a CS research studio with five academic peers.
- Preprocessed and structured datasets by converting JSON to CSV using Python, optimizing data for analysis in Excel
- Applied two pretrained RoBERTa models (HuggingFace) for sentiment analysis and emotion classification (anger, joy, sadness, fear), achieving 90%+ accuracy
- Visualised insights using Matplotlib and Excel, analysing disparities between critics and audience sentiment

Clarichat: AI Interview Prep. – Github
- Collaborated in a team of 5 to develop an AI-driven web app in 14 weeks using JavaScript, React, Node.js and Firebase, integrating OpenAI API to simulate interviews with contextual responses to 50+ questions
- Employed Agile methodologies with bi-weekly sprints on Azure Boards, managing code with Git/GitHub, working on individual branches and merging updates to master for seamless integration
- Implemented CI/CD with Azure Pipelines & GitHub Actions, achieving 95%+ pipeline success rate and 100% test coverage through automated testing and deployment
- Utilised Firebase for user authentication, updating of interview questions, responses and history

Thoughts: Journal App with AI Assistant – Github
- I teamed up with 2 other developers to develop an iOS app of our choice, a journal app for users to record their current thoughts at any time and successfully implemented a conversational AI to ask for life advices
- Nominated for the Software Engineering showcase at UTS TechFest and was invited to the iOS Hackathon
- Utilised Swift, SwiftUI, used the OpenAI API for the chatbot with a "well-being" prompted context

EXTRA-CURRICULAR ACTIVITIES

Kaggle Competition – NBA Rookie Longevity Prediction *(Tied 3rd place out of 175 participants)*
- Developed predictive models in Python to determine whether NBA rookies would last at least 5 years in the league, utilising Decision Trees, kNN, Random Forest, SVM and Neural Networks
- Applied feature selection, outlier analysis and train-test splitting, validating improvements through cross-validation
- Optimized a Neural Network by combining ensemble methods (SVM, Logistic Regression and AdaBoost), improving AUC score from the benchmark of 0.475 to 0.712, a 50% increase, making it my top-performing model
- Evaluated model performance using F1 Score and Accuracy, outperforming 98% of participants on the leaderboard

TECHNICAL SKILLS

Languages: Python, C#, TypeScript, JavaScript, Java, Swift, SQL, HTML/CSS, Bash
Databases: PostgreSQL, MongoDB, Firebase
Libraries/Frameworks: .NET, ASP.NET, Entity Framework, React.js, Next.js, Pandas, NumPy, Matplotlib, PyTorch
Developer Tools: Git, Linux/WSL2, VSCode, Visual Studio, Unity, Node.js, AWS, Docker, Excel, Microsoft Office