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Jason Vu

github.com/jasuovu
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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 – Reinforcement Learning & AI **Feb 2024 – Nov 2024**
University of Technology Sydney

- Contributed to UTS Artificial Intelligence research by developing a transfer learning framework for reinforcement learning (RL), applied to Street Fighter II and Fatal Fury 2
- Achieved a 99/100 thesis mark for optimizing Proximal Policy Optimization (PPO) 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 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

- Collaborated with 5 academic peers as part of a CS research studio, simulating real industry research and analytics experience, to compare and analyse over 1,000+ critics' and audience reviews using machine learning techniques
- Utilised IMDb API to gather reviews from Metacritic (critics) and IMDb (audiences) for data collection
- Converted JSON data to CSV format and performed data preprocessing using Python, organising datasets for Excel
- Performed Sentiment Analysis and Emotion Classification using two pretrained RoBERTa models from HuggingFace, one for sentiment and the other to detect emotions like anger, joy, sadness and fear, achieving over 90% accuracy
- Created graphs using Matplotlib and Excel to analyse model accuracy and disparities between critics and audiences

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 ChatGPT 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 using Azure Pipelines and GitHub Actions, achieving over 95% pipeline success rate and 100% test coverage through automated unit testing and deployment
- Utilised Firebase as the database 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

DrumoCat: MIDI-Integrated Interactive Drum App – Github

- Developed an interactive application in Processing, connecting a MIDI e-drum kit to a virtual drum kit with a cat character, featuring 12 drum sounds and animations synced to user inputs as a passion project
- Implemented advanced features such as recording drum inputs, quantization (beat snapping), BPM adjustments, and playback sequence saving, using timestamps to transform time-series audio data
- Integrated additional tools, including an MP3 player, BPM tapper, metronome, drumbeat visualizer, trimming function
- Utilised Java for audio processing, MIDI integration, and ControlP5 for creating interactive and visually engaging UIs

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
Developer Tools: Git, Linux/WSL2, VSCode, Visual Studio, Unity, Node.js, AWS, Azure, Docker, Excel