Sukai Huang

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EDUCATION

Doctor of Philosophy - Engineering and IT Jul 2021 - Jun 2025
The University of Melbourne
- Thesis: Integrating Natural Language for Sequential Decision Problems
- Melbourne Research Scholarship for PhD
- Advisor: A.Prof. Nir Lipovetzky and Prof. Trevor Cohn

Bachelor of Advanced Computing (Honours) Jul 2017 - Jul 2021
Australian National University
- Specialized in Machine Learning Systems
- Conducted research on Procedural Content Generation (PCG) using Generative Adversarial Networks
- First Class Honours; Chancellor's Letters of Commendation 2018, 2020; ANU Dean's Award 2019; GPA: 6.84 / 7.00

EXPERIENCE

Postdoctoral Research Fellow Jun 2025 - Present
Monash University, Full-time
- Researched on Neuro-Symbolic AI, LLMs for Planning & VLMs for embodied agents.
- Participated in Assured Neuro Symbolic Learning and Reasoning program.

Machine Learning Engineer May 2022 - Nov 2023
FINVISE London, Remote Contract
- Implemented an Automated Valuation Model (AVM), enhancing property valuation accuracy to exceed 80%
- Automated data collection and preprocessing pipeline using multiprocessing Selenium and Pandas, efficiently handling over 20 million multimodal property datasets (textual, numerical, and categorical)
- Proposed the use of a Masked Autoencoder (MAE) as the model backbone, addressing the challenge of approximately 20% missing data in the dataset through advanced mask learning techniques

Software Developer Oct 2023 - Nov 2023
Self-initiated Web App Project, https://banpick.win/
- Designed and constructed "BanPick", a dynamic game drafting tool tailored for DOTA2 enthusiasts, utilizing a parallel alpha-beta pruning algorithm, enhancing strategic planning and game experience

Tutor Feb 2020 - Jul 2021
Australian National University, Canberra, ACT
- Planned and delivered interactive tutorials between 2017 and 2020, teaching Python and Data Management

TECHNICAL SKILLS

- Programming Languages: proficient in Python, with expertise in the Pytorch, Selenium, Numpy, Pandas, and Sklearn, complemented by relevant tools like Git, Hydra, Prefect, Kedro and Wandb
- Past experience with Java, SQL, C++ and Haskell

AWARDS AND RECOGNITIONS

- AAAI 2025 Scholarship, Association for the Advancement of Artificial Intelligence
- Two oral presentations at Workshop on Planning in the Era of LLMs (LM4Plan @ AAAI 2025)
- Winner in the Aesthetic Track of the Angry Birds Level Generation Competition at IEEE COG'20
- Researcher in ANU Summer Scholarship Program 2019, working on emotion recognition model

PUBLICATIONS

- Huang, Sukai, Nir Lipovetzky, and Trevor Cohn. "Chasing Progress, Not Perfection: Revisiting Strategies for End-to-End LLM Plan Generation." International Conference on Automated Planning and Scheduling (ICAPS), 2025 (Oral)
- Huang, Sukai, Nir Lipovetzky, and Trevor Cohn. "Planning in the Dark: LLM-Symbolic Planning Pipeline without Experts." AAAI Conference on Artificial Intelligence (AAAI), 2025
- Huang, Sukai, Nir Lipovetzky, and Trevor Cohn. "The Dark Side of Rich Rewards: Understanding and Mitigating Noise in VLM Rewards."International Joint Conference on Neural Networks (IJCNN), 2025
- Huang, Sukai, Nir Lipovetzky, and Trevor Cohn. "A Reminder of its Brittleness: Language Reward Shaping May Hinder Learning for Instruction Following Agents." arXiv preprint arXiv:2305.16621 (2023)