Joe (Anh) NGUYEN

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About me

Currently, I am working on language agents: how to make agents understand human language and act accordingly in interactive tasks. I have experiences in multimodal, model-based RL, LLM and language-conditioned agents.

Education

2024-2027 (expected)	PhD. in Artificial Intelligence at Oregon State University.
2022-2024	Msc. in Artificial Intelligence at Oregon State University. **GPA**: 3.96 / 4.0. **Thesis**: Language-conditioned world models improve policy generalization in dynamics-descriptive language understanding tasks
Aug 2014- Aug 2019	B.S in Computer Science at HCM University of Science, Vietnam National University. **Thesis**: BERT for extractive summarization in long documents. **GPA**: 3.81 / 4.0 (Top 5%)

Research Experiences

July 2023-Current	**Research Assistant in language agents for game and computer (GUI) tasks, at Oregon State University, with Prof Stefan Lee.** • Developed an GUI (Computer) agent that can understand text and video tutorial to do computer tasks in OSWorld. • Developed an agent that can understand language descriptions of environments and generalize over new language and environment dynamics: state-of-the-art over existing methods Dynalang, EMMA, LWM. [1]
Mar 2022-Sep 2023	**Research Assistant in Multimodal (underwater referring expression), at Oregon State University, with Prof Stefan Lee.** • Compared and analyzed results from the state-of-the-art methods in referring expressions: OFA and CLIP model under this new dataset. • Collected new data in referring expressions for underwater objects • Results suggest that OFA and CLIP both have low accuracy performance on underwater objects that are rare in territorial settings.
Nov 2019-Nov 2021	**Research Engineer in Multimodal: ambiguous referring expression in images at Sing. Management University, with Prof Jiang Jing** • Built the modified version of CLEVR and Ref-Reasoning where referring expressions are ambiguous (referring to multiple objects) • Developed a method that can raise new questions to the user to clarify ambiguously visual questions based on parsed modules (neural module network)
Jan-June 2018	**Research intern in NLP at Singapore University of Technology and Design, with Professor Lu Wei** • Build a new dataset for dense Visual Semantic Role Labelling (multiple actions per image) from Visual Genome dataset & proposing annotation pipeline • Constituency parsing: incorporate early parsing on Recurrent Neural Network grammar
June-Sep 2017	**Research Intern in NLP at Knorex Vietnam**: • Build dataset and deep learning models to solve Brand Safety problem, i.e. classify bad content categories in text such as Adults, Death & tragedy, violence, etc: overall 93% F1 • Build image data and image classifier for Brand Safety problem - overall 95% F1 • Implement an improved version of Click-through rate model, improved 10% AUC to previous model of the company

Publications

1. Anh Nguyen, Stefan Lee. Language-conditioned world model improves policy generalization by reading environmental descriptions, accepted at Bridging Language, Agent, and World Models workshop at NeurIPS2025.
2. Duy Phung, Tu Minh, Anh Nguyen, Tien Dinh, *"DTA Hunter System: A new statistic-based framework of predicting future demand for taxi drivers"*, accepted for presentation @ SoICT 2017 (The Eighth International Symposium

on Information and Communication Technology)

Coursework Projects

- Language-conditioned LLM-based world model: Identified the research gap of current LLM-based model based RL systems: they failed to incoperate language into the world model, thus unable to change world modeling on the fly based on language.
- **Exploration in RL**: Compared different exploration strategies in model-based RL: count-based, curiosity-based and Monte-Carlo dropout in PointMaze
- **Search in Games (Sudoku and (M,N,K))**: Compared different tree search in Sodoku and (M,N,K) game: Monte-Carlo Tree Search, A* and Minimax with Alpha-Beta prunning.

Awards and academic Activities

2025	Scholarly Presentation Award from Oregon State University.
2022	Vietnam Education Foundation (VEF) 2.0 recommended candidate for Ph.D programs in the USA.
2019	Fully funded exchange at Taipei APEC Forum on Digital Innovation and Entrepreneurship (Taiwan)
2019	Fully funded exchange at GKS ASEAN SCIENCE at Kyungwoon University (Korea)
2019	Fully funded exchange at Korea Advanced Institute of Science and Technology Electrical Engineering
2019	Fully funded exchange at Southeast Asia Machine Learning School
2019	Scholarship from Shinhan Bank for excellent students
2017	Scholarship from American Chamber of Commerce Vietnam for excellent students
2017	Scholarship from Global Cybersoft for excellent students
2017	Scholarship from Esilicon Vietnam for excellent students
2016	ACM-ICPC Vietnam National competitive programming contest: Third Prize
2016	HCMc University of Science Olympiad in Informatics : Honorable mention
2013	Vietnam Olympiad in Informatics for High-school Student: Honorable Mention

Teaching Assistant Experiences

- Introduction to Machine Learning (graduate) (2023)
- Introduction to Machine Learning (undergrad) (2023)
- Introduction to Programming Language (undergrad) (2022)
- Computer Science Capstone (undergrad) (2023)

Skills

- Competitive Programming; C++ (expert), Python (expert), Java (familiar with)
- Research: Pytorch (expert), Jax (expert), Tensorflow (proficient).

References

1. **Professor Stefan Lee**
   Electrical Engineering & Computer Science, Oregon State University
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2. **Professor Jing Jiang**
   School of Information Systems, Singapore Mangement University, Singapore
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3. **Professor Trac D. Tran**
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