

# Hoang Tran, BSc.

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## Personal Information

- 1 A **NLP research engineer** and **software engineer**, eager to learn new knowledge and try new skills, dream of creating *useful and awesome applications* that can *solve real-world problems*.
- 2 Some of my hobbies are *reading books* (both technical and non-technical) and *learning new foreign languages*.
- 3 Outside of the tech world, I enjoy playing sports, especially badminton.

## Research Interests

- 1 *LLM agents*, applying them in **neural code generation** and software engineering
- 2 **ML Explainability & Interpretability**, *Transformer Mechanistic Interpretability*, and **AI Alignment**
- 3 **Reinforcement Learning** and applications in NLP tasks

## Education

- 2020 – 2024 **B.Sc., Ho Chi Minh City University of Technology** Computer Science.
- 2024 **AI Alignment Research Engineer Accelerator (ARENA) Program** Auditing.  
A program designed to equip participants with technical AI safety skills. It dives into specific areas of the field like *interpretability*, *RL - RLHF*, and *evaluation*.

## Work Experience

- 06/2023 – 11/2024 **Software Engineer**, NAB Innovation Centre Vietnam
- 05/2024 – present **Open-source Contributor**, at the start-up All Hands AI, on the *OpenHands* project: working on LLM-based agent development, multi-agent workflows for software development and integration of benchmarks, result visualization to evaluate them.

## Research Experience

- 10/2024 – present **Research Engineer**, All Hands AI
- develop a novel LLM routing method that helps reduce cost by 20%.
  - work on evaluation and maintain an agent-computer interface (ACI) for coding agents.

## Research Experience (continued)


12/2023 – present

**Research Member**, URA Research Group, Ho Chi Minh City University of Technology: to

- develop a chatbot for university admission consultant, based on our in-house LLM Ura-Llama and *Retrieval-Augmented Generation*.
- work on semantic parsing from natural language (NL) to first-order logic (FOL) as a stage in the question-answering with symbolic reasoning pipeline.

## Publications

### Preprint

- 1 Xingyao Wang, Boxuan Li, Yufan Song, Frank F. Xu, Xiangru Tang, Mingchen Zhuge, Jiayi Pan, Yueqi Song, Bowen Li, Jaskirat Singh, **Hoang Tran**, Fuqiang Li, Ren Ma, Mingzhang Zheng, Bill Qian, Yanjun Shao, Niklas Muennighoff, Yizhe Zhang, Binyuan Hui, Junyang Lin, Robert Brennan, Hao Peng, Heng Ji, and Graham Neubig, *Opendevin: An open platform for ai software developers as generalist agents*, 2024. arXiv: 2407.16741 [cs.SE].  URL: <https://arxiv.org/abs/2407.16741>.
- 2 Longxu Dou, Qian Liu, Fan Zhou, Changyu Chen, Zili Wang, Ziqi Jin, Zichen Liu, Tongyao Zhu, Cunxiao Du, Penghui Yang, Haonan Wang, Jiaheng Liu, Yongchi Zhao, Xiachong Feng, Xin Mao, Man Tsung Yeung, Kunat Pipatanakul, Fajri Koto, Min Si Thu, Hynek Kydlíček, Zeyi Liu, Qunshu Lin, Sittipong Sripaisarnmongkol, Kridtaphad Sae-Khow, Nirattisai Thongchim, Taechawat Konkaew, Narong Borijindargoon, Anh Dao, Matichon Maneegard, Phakphum Artkaew, Zheng-Xin Yong, Quan Nguyen, Wannaphong Phatthiyaphaibun, **Hoang Tran**, Mike Zhang, Shiqi Chen, Tianyu Pang, Chao Du, Xinyi Wan, Wei Lu, and Min Lin, *Sailor2: Sailing in south-east asia with inclusive multilingual llm*, 2024.

## Skills

<b>AI/ML/DL/RL</b>	<ul style="list-style-type: none"><li>• fundamental knowledge with a focus on Natural Language Processing (NLP) and Large Language Models (LLMs).</li><li>• experience with popular DL frameworks: PyTorch, HuggingFace, ...</li><li>• knowledgeable in basics of MLOps practices and tools: DVC, GCP, W&amp;B, FastAPI, and Streamlit.</li><li>• basic knowledge of with well-known AI interpretability techniques: Partial Dependence Plots (PDP), LIME, SHAP, gradient-based methods, ...</li></ul>
<b>Programming</b>	<ul style="list-style-type: none"><li>• fundamental knowledge of Data structures &amp; Algorithms</li><li>• experience with various languages e.g., Python, Java, JavaScript/TypeScript, GoLang, SQL, <math>\LaTeX</math>, ...</li></ul>
<b>Software Engineering</b>	experience in multiple aspects, ranging from back-end, front-end, mobile development to DevOps, testing, security practices.
<b>Languages</b>	<ul style="list-style-type: none"><li>• <i>Vietnamese</i>: fluent</li><li>• <i>English</i>: IELTS 7.0</li><li>• <i>Chinese</i>: HSK1</li><li>• <i>France</i>: A1.1</li></ul>

## Miscellaneous Experience

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### Side Projects

- Travel and Read**
- *About:* Using LLM and neural translation techniques, this project is built to help translate public domain books from English to various languages (e.g., Vietnamese). The goal is to make reading more accessible and language learning more effective.
  - *Skills:* Neural Machine Translation - LLM - Text Embeddings
- OpenHands-ACI**
- *About:* An Agent-Computer Interface (ACI) designed for software development agents.
  - *Skills:* Coding Agents - LLM - Python
  - *Project link:* source code available at this URL [↗](#)
- Dethispace**
- A project developed in the *Google Developer Student Club (GDSC) Hackathon 2024*.
- *About:* Dethispace is a social network where users can create new tests with their documents, new sessions to practice and invite friends to study together. The practice history is saved for later review. The goal is to help students to be more productive in their learning journey.
  - *Skills:* Firebase - Svelte - TypeScript
  - *Project link:* available at this URL [↗](#)
- iDunno**
- A group membership service based on Gossip dissemination.
- *About:* In this project, we build a distributed group membership service, which can be used to implement other higher-level distributed systems. The service functionalities, as the name implies, are to manage membership and broadcast messages to the cluster. It does that by maintaining, at each machine in the system a list of the group, i.e., other machines that are connected and up.
  - *Skills:* Java - Distributed Systems - Network Programming
  - *Source code:* available at this GitHub URL [↗](#)

### Certification and Courses

- 2023     **AWS Certified Cloud Practitioner** and **AZ-900: Microsoft Azure Fundamentals.** Cloud Computing Fundamentals.
- 2024     **CMU's CS11-711 Auditing.** Advanced Natural Language Processing.

## References

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