Toan Nguyen

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Education

Ho Chi Minh City University of Science, BS in Computer Science   Sep 2019 – March 2024
- GPA: 3.64/4.00, 8.49/10.00
- Thesis: Open-Vocabulary Affordance Detection in 3D Point Clouds. Grade: 11/10. Advisor: **Prof. Bac Le**

Research Experience

AI Research Resident, FPT Software AI Center, Ho Chi Minh   Jul 2022 – Present
- Robotics and Computer Vision Team. Advisors: **Prof. Anh Nguyen** and **Prof. Ngan Le**
- Research topics: Multimodal Robot Learning, Generative Models for Robotics and 3D Scene Generation, Embodied Navigation, LLM-Based Multi-Agent Systems, Identity-Preserving Image Generation

Research Assistant, Ho Chi Minh City University of Science, Ho Chi Minh   Jan 2022 – Jul 2022
- AISIA Research Lab. Advisor: **Prof. Binh Nguyen**
- Research topics: Representation Learning, Fine-Grained Image Classification, Insect Pest Classification and Detection, Image Data Augmentation

Publications

Language-Driven 6-DoF Grasp Detection Using Negative Prompt Guidance
Toan Nguyen, Minh Nhat Vu, Baoru Huang, An Vuong, Quan Vuong, Dung Nguyen, Ngan Le, Thieu Vo, Anh Nguyen
European Conference on Computer Vision (ECCV), 2024, Oral Presentation (top 2.33%)

HabiCrowd: A High-Performance Simulator for Crowd-Aware Visual Navigation
An Vuong, *Toan Nguyen*, Minh Nhat Vu, Baoru Huang, Dung Nguyen, Binh Huynh, Thieu Vo, Anh Nguyen
IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS), 2024

Language-Conditioned Affordance-Pose Detection in 3D Point Clouds
Toan Nguyen, Minh Nhat Vu, Baoru Huang, Tuan Vo, Vy Truong, Ngan Le, Thieu Vo, Bac Le, Anh Nguyen
IEEE International Conference on Robotics and Automation (ICRA), 2024

Open-Vocabulary Affordance Detection Using Knowledge Distillation and Text-Point Correlation
Tuan Vo, Minh Nhat Vu, Baoru Huang, *Toan Nguyen*, Ngan Le, Thieu Vo, Anh Nguyen
IEEE International Conference on Robotics and Automation (ICRA), 2024

Language-Driven Scene Synthesis Using Multi-Conditional Diffusion Model
An Vuong, Minh Nhat Vu, *Toan Nguyen*, Baoru Huang, Dung Nguyen, Thieu Vo, Anh Nguyen
Conference on Neural Information Processing Systems (NeurIPS), 2023

Open-Vocabulary Affordance Detection in 3D Point Clouds
Toan Nguyen, Minh Nhat Vu, An Vuong, Dung Nguyen, Thieu Vo, Ngan Le, Anh Nguyen
IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS), 2023, Best Overall & Best Student Paper Awards Finalist (top 0.43%)

Deep-Wide Learning Enhancement for Insect Pest Classification
Toan Nguyen, Huy Nguyen, Huy Ung, Hieu Ung, Binh Nguyen
Under submission

Presentations

Oral paper presentation, ECCV, 2024	Milano, Italy
Multimodal Robotics, FPT Software AI Center, 2024	Ho Chi Minh, Vietnam
Oral paper presentation, IROS, 2023	Michigan, USA

Honors and Awards

- **Registration Grant**, ECCV, 2024
- **Oral Presentation**, ECCV, 2024
- **Award for Technology and Innovation Publications**, Ho Chi Minh City University of Science, 2024
- **Best Paper & Best Student Paper Awards Finalist**, IROS, 2023

Professional Services

- **Conference Reviewer:** ICCV 2025, ECCV 2024, ICRA 2024, IROS 2024
- **Journal Reviewer:** RA-L 2025

Skills

Programming: Python, C/C++, Julia, R, Java, Javascript, SQL, HTML, CSS, Linux, MATLAB

AI: Robotics, Generative Models, Embodied AI, 2&3D Computer Vision, Multimodal Learning, Large Language Models, Multi-Agent Systems

Frameworks: Pytorch, Tensorflow, Keras, Jax, Pandas, NumPy, scikit-learn, OpenCV, ROS, Node.js, React

Tools: Docker, Google Cloud, Jupyter Notebook/Lab, Git, Blender

Languages: English (8.0 IELTS), Vietnamese (native)

Extra-Curricular Activities

Program Advisor — Feb 2021, 2022, 2023
Guide and support Duc Pho No.1 high school students in national entrance exam preparation, undergraduate program selection, and career orientation.

Volunteer — May 2020
Fundraise 5,000$ to refurbish Mr. Tu's school for underprivileged children in Ho Chi Minh City.

References

Prof. Anh Nguyen: anh.nguyen@liverpool.ac.uk
Associate Professor of Computer Science at the University of Liverpool.

Prof. Ngan Le: thile@uark.edu
Assistant Professor of Computer Science at the University of Arkansas.

Prof. Bac Le: lhbac@hcmus.edu.vn
Professor of Computer Science, Head of the CS Department of the Faculty of Information Technology at the Ho Chi Minh City University of Science.

Prof. Binh Nguyen: ngtbinh@hcmus.edu.vn
Associate Professor of Computer Science, Head of the CS Department of the Faculty of Mathematics and Computer Science at the Ho Chi Minh City University of Science.

Dr. Thieu Vo: thieuvo@nus.edu.sg
Postdoctoral Researcher of the Department of Mathematics at the National University of Singapore.

Dr. Quan Vuong: quan.hovuong@gmail.com
Robotics Researcher and Co-Founder at Physical Intelligence.