

# Hung Tran

[Linkedin](#) - [Google Scholar](#) - [Github](#) - [Website](#) - [Email](#)

## PROFESSIONAL PROFILE

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- Ph.D. student in Machine Learning, Computer Vision. Est. graduation: Jan 2024.
- Research interest: Human behavior understanding, Video understanding, Knowledge Representation with LLMs.
- First author of papers at ICCV 2023, CVPRW 2022, WACV 2021.
- Industrial experiences in distributed web-based systems. Proficiency in Python and deep learning frameworks.

## EDUCATION

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| <b>Ph.D. in Computer Science</b> – Applied Artificial Intelligence Institute (A2I2), Deakin University, Australia<br>Thesis: Analyzing Structures of Human Behavior in Videos. | <b>Jan 2020 –<br/>Jan 2024</b> |
| <b>Bachelor in Information Technology</b> – The University of Danang, Vietnam<br>Thesis: Light-weight Deep Learning model for Human Segmentation. Top 10%.                     | <b>May 2014 –<br/>May 2019</b> |

## RESEARCH EXPERIENCE

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| <b>Foundational Commonsense Prior for Video Action Prediction</b> – A2I2, Deakin University, Australia<br>• Incorporating LLMs to enhance existing vision models, while maintaining a practical inference speed.<br>• <u>Outcome</u> : One planned submission to CVPR 2024.  | <b>Dec 2022 –<br/>Nov 2023</b> |
| <b>Persistent – Transient Duality in Human Behavior Modeling</b> – A2I2, Deakin University, Australia<br>• Addressed the inflexibility of neural networks in modeling the mode-switching nature of human behavior. Introduced a concept of persistent-transient duality to represent this mode-switching nature.<br>• Implemented a parent-child network with an egocentric design and a dynamic switching mechanism to model this concept.<br>• Achieved new SoTA in 3D and 2D motion prediction, and trajectory prediction.<br>• <u>Outcome</u> : Two papers accepted at CVPRW 2022 and ICCV 2023. | <b>Jan 2021 –<br/>Nov 2022</b> |
| <b>Goal-driven Trajectory Prediction</b> – A2I2, Deakin University, Australia<br>• Formulated the concept of goal-based modeling and applied it to Trajectory Prediction.<br>• Designed a dual-stream, hierarchical network to model the pedestrians' goal and forecast future trajectories.<br>• <u>Outcome</u> : One paper accepted at WACV 2021.  | <b>Feb 2020 –<br/>Dec 2020</b> |
| <b>Affordable Mini Self-driving vehicle</b> – VNUK, The University of Danang, Vietnam<br>• Developed an affordable self-driving platform for educational purpose.<br>• Designed a cost-effective hardware configuration for the self-driving car, inspired by a costly open-source project.<br>• Implemented the vehicle control interface with lane-line detection and object detection in various lighting conditions.<br>• <u>Outcome</u> : Cut the cost of building a 1/10 scale Nvidia-equipped self-driving car from \$4,200 to under \$2,000.   | <b>May 2019–<br/>Aug 2019</b>  |

## INDUSTRIAL EXPERIENCE

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| <b>Software developer intern</b> – Sioux High Tech Software Ltd.<br>• Developed a remote learning system on AWS using Node.js, MongoDB, and React.js.<br>• Deployed the system on Amazon EC2 instances in 3 regions: Singapore, North America, and China, using Amazon S3 for data storage, Docker for containerization, and Nginx for DNS mapping.<br>• <u>Outcome</u> : A distributed system for real-time online teaching with full unit-testing and back-up functionalities. | <b>Sep 2018 –<br/>Jan 2019</b> |
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## SKILLS

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**Programming Languages:** Python - Over 5 years of experience, Other: C/C++, JS, Node.js, MongoDB.  
**Deep Learning Models:** RNNs, CNNs, Transformers (ViT, MViT), Multimodal Networks (CLIP, Open Flamingo), LLMs.  
**Libraries:** PyTorch, Hugging Face, NetworkX, NumPy, Pandas, OpenCV, Matplotlib.  
**Platform:** AWS, Google Cloud, Git, Docker, Slurm, Distributed Computing (NCCL, Ray Framework).

## PUBLICATIONS

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- **Hung Tran**, Vuong Le, Svetha Venkatesh, Truyen Tran. "*Persistent-Transient Duality: A Multi-Mechanism Approach for Modeling Human-Object Interaction.*" Proceedings of The International Conference on Computer Vision (ICCV), 2023.
- **Hung Tran**, Vuong Le, Svetha Venkatesh, Truyen Tran. "*Persistent-Transient Duality in Human Behavior Modeling.*" Proceedings of the IEEE/CVF Conference on Computer Vision and Pattern Recognition Workshop (CVPRW) 2022.
- **Hung Tran**, Vuong Le, and Truyen Tran. "*Goal-driven Long-Term Trajectory Prediction.*" Proceedings of the IEEE/CVF Winter Conference on Applications of Computer Vision (WACV), 2021.

## SCHOLARSHIPS AND AWARDS

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Deakin University Postgraduate Research Scholarship.

2020 – 2024

People's choice Award, Three Minute Thesis Competition, A2I2.

2023

Top 8 nationwide, Digital Race Driverless: Self-driving car competition, FPT Group, Vietnam.

2018

## REFERENCES

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- **Dr. Vuong Le**, Amazon Machine Learning Australia - [levuong@amazon.com](mailto:levuong@amazon.com)
- **A/Prof. Truyen Tran**, Applied Artificial Intelligence Institute - [truyen.tran@deakin.edu.au](mailto:truyen.tran@deakin.edu.au)
- **Prof Svetha Venkatesh**, Applied Artificial Intelligence Institute - [svetha.venkatesh@deakin.edu.au](mailto:svetha.venkatesh@deakin.edu.au)