

Hung Tran

[Linkedin](#) – [Google Scholar](#) – [Github](#) – [Website](#)

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PROFESSIONAL PROFILE

- 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.
- Proficiency in Multi-GPU training, Computer Vision, Natural Language Processing, and Multi-modal Deep learning.

EDUCATION

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

RESEARCH EXPERIENCE

- Foundational Commonsense Prior for Personalized Action Forecasting** – A2I2, Deakin University, Australia **Dec 2022 – Nov 2023**
- Incorporating LLMs to enhance existing vision models, while maintaining a practical inference speed.
 - Outcome: One planned submission to CVPR 2024.
- Persistent – Transient Duality in Human Behavior Modeling** – A2I2, Deakin University, Australia **Jan 2021 – Nov 2022**
- Modeling sequential human behavior in a multi-mechanism neural network with model switching capability.
 - Implemented this model to predict future human behavior using video inputs.
 - Achieved new SoTA in 3D and 2D motion prediction, and trajectory prediction.
 - Outcome: Two papers accepted at CVPRW 2022 and ICCV 2023.
- Goal-driven Pedestrian Trajectory Prediction** – A2I2, Deakin University, Australia **Feb 2020 – Dec 2020**
- Formulated the concept of goal-based modeling and applied it to Trajectory Prediction.
 - Designed a dual-stream, hierarchical network to model the pedestrians' goal and forecast future trajectories.
 - Outcome: One paper accepted at WACV 2021.
- Affordable Mini Self-driving vehicle** – VNUK, The University of Danang, Vietnam **May 2019– Aug 2019**
- Developed an affordable self-driving platform for educational purpose.
 - Designed a cost-effective hardware configuration for the self-driving car, inspired by a costly open-source project.
 - Implemented the vehicle control interface with lane-line detection and object detection in various lighting conditions.
 - Outcome: Cut the cost of building a 1/10 scale Nvidia-equipped self-driving car from \$4,200 to under \$2,000.
- Research Output Collection and Categorization System** - The University of Danang, Vietnam. **Sep 2016– May 2017**
- Designed an automated system to crawl and organize research output at the University of Danang.
 - Unsupervised categorization of research output into topics using Latent Dirichlet Allocation. Classified newly added research output into these topics. Outcome: First prize in the university-level student research competition.

INDUSTRIAL EXPERIENCE

- Software developer intern** – Sioux High Tech Software Ltd. **Sep 2018 – Jan 2019**
- Developed a remote learning system on AWS using Node.js, MongoDB, and React.js.
 - 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.
 - Outcome: A distributed system for real-time online teaching with full unit-testing and back-up functionalities.

PUBLICATIONS

- **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.

SKILLS

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).

Embedded Computing Platforms: Raspberry Pi, Arduino, Nvidia Jetson Tx1/2.

SCHOLARSHIPS AND AWARDS

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

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