

Research Interest

My research interests focus on deep learning and machine learning techniques for visual perception, video analysis, and vision and language reasoning. These capabilities are the key elements required of the next generation of virtual assistant systems. Real-world applications of these systems include security and safety services, healthcare.

Education

11/2018-12/2021 **Ph.D. in Computer Science**

Applied Institute of Artificial Intelligence, Deakin University, Australia

Thesis title: *Deep Neural Networks for Visual Reasoning*

9/2016-9/2018 **M.Eng. in Computer Science**

Department of Computer Science, Tokyo Institute of Technology, Japan

Thesis title: *F2CSkeleton: A Tailor-Made Approach for 3D Human Action Recognition*

8/2009-6/2014 **B.Eng. in Electronics and Communication Engineering**

Electronics and Telecommunications, Hanoi University of Science and Technology (HUST), Vietnam

Thesis title: *Automatic Face Recognition Using Local Images for Mobile Platforms, Ranked 10/526*

Work Experience

8/2025-Present **Assistant Professor of Artificial Intelligence**

Penn State Great Valley, Pennsylvania State University, USA

12/2021-8/2025 **Research Fellow**

Applied Institute of Artificial Intelligence, Deakin University, Australia

8/2017-4/2018 **Research Intern**

Yahoo! JAPAN Research, Yahoo Japan Corporation, Tokyo, Japan

6/2014-8/2016 **Software Engineer**

Samsung Vietnam Mobile R&D Centre (SVMC), Hanoi, Vietnam

1/2014-5/2014 **Intern**

Samsung Vietnam Mobile R&D Centre (SVMC), Hanoi, Vietnam

Publications (Selected)

Full list: <https://scholar.google.com/citations?user=0irkZtkAAAAJ&hl=en>

- 1 Truyen Tran, Vuong Le, Hung Le, **Thao Minh Le**. "From Deep Learning to Deep Reasoning". *Conference Tutorials (Peer-reviewed)*, delivered at the KDD'21 and IJCAI'21, August 2021.

Journal Articles

- 2 Romero Morais, **Thao Minh Le**, Truyen Tran, Caroline Alexander, Natasha Amery, Catherine Morgan, Alicia Spittle, Vuong Le, Nadia Badawi, Alison Salt, Jane Valentine, Catherine Elliott, Elizabeth M Hurrion, Paul A Dawson, Svetha Venkatesh, "Confident and Trustworthy Model for Fidgety Movement Classification". (*IEEE Journal of Biomedical and Health Informatics*, 2025).
- 3 Long Hoang Dang, **Thao Minh Le**, Vuong Le, Tu Minh Phuong, Truyen Tran, "Dynamic Reasoning for Movie QA: A Character-Centric Approach". (*IEEE Transactions on Multimedia*, 2023).
- 4 **Le Minh Thao**, et al. "VLSP 2021 – VieCap4H Challenge: Automatic Image Caption Generation for Healthcare Domain in Vietnamese". (*VNU Journal of Science*, 2022).
- 5 **Thao Minh Le**, Vuong Le, Svetha Venkatesh, Truyen Tran, "Hierarchical Conditional Relation Networks for Multimodal Video Question Answering". (*Int. Journal of Computer Vision*, 2021).

Conference Papers (Peer-reviewed)

- 6 Thong Bach, Dung Nguyen, **Thao Minh Le** and Truyen Tran, "Rethinking Deep Alignment Through The Lens Of Incomplete Safety Learning". (AAAI, 2026, **acceptance rate: 17.6%**).
- 7 Tuyen Tran, **Thao Minh Le**, Quang Hung Le, Truyen Tran, "Planner-Refiner: Dynamic Space-Time Refinement for Vision-Language Alignment in Videos". (ECAI, 2025, **acceptance rate: 23%**).

- 8 Quang Hung Le, Long Hoang Dang, Ngan Le, Truyen Tran, **Thao Minh Le**, “Progressive Multi-granular Alignments for Grounded Reasoning in Large Vision-Language Models”. (AAAI-25, **acc. rate: 23.4%**).
- 9 Tuyen Tran, **Thao Minh Le**, Hung Tran, Truyen Tran, “Unified Compositional Query Machine with Multimodal Consistency for Human Activity Recognition”. (BMVC, 2024, **acceptance rate: 25%**).
- 10 **Thao Minh Le**, Vuong Le, Sunil Gupta, Svetha Venkatesh and Truyen Tran, “Guiding Visual Question Answering With Attention Priors”. (WACV, 2023, **acceptance rate: 22%**).
- 11 Hoang Anh Pham, **Thao Minh Le**, Vuong Le, Tu Minh Phuong, Truyen Tran, “Video Dialog as Conversation about Objects Living in Space-Time”. (ECCV, 2022, **acceptance rate: 28%**).
- 12 Long Hoang Dang, **Thao Minh Le**, Vuong Le, Truyen Tran, “Hierarchical Object-oriented Spatio-Temporal Reasoning for Video Question Answering”. (IJCAI, 2021, **acceptance rate: 14%**).
- 13 **Thao Minh Le**, Vuong Le, Svetha Venkatesh and Truyen Tran, “Dynamic Language Binding in Relational Visual Reasoning”. (IJCAI, 2020, **acceptance rate: 13%**).
- 14 **Thao Minh Le**, Vuong Le, Svetha Venkatesh and Truyen Tran, “Neural Reasoning, Fast and Slow, for Video Question Answering”. (IJCNN, 2020).
- 15 **Thao Minh Le**, Vuong Le, Svetha Venkatesh and Truyen Tran, “Hierarchical Conditional Relation Networks for Video Question Answering”. (CVPR, 2020, **top 5% accepted for Oral presentation**).
- 16 **Thao Minh Le**, Nakamasa Inoue, Koichi Shinoda. “A Fine-to-Coarse Convolutional Neural Network for 3D Human Action Recognition”. (BMVC, 2018, **acceptance rate: 30%**).
- 17 **Thao Le Minh**, Nobuyuki Shimizu, Takashi Miyazaki, Koichi Shinoda. “DL-based multimodal addressee recognition in visual scenes with utterances”. (IJCAI, 2018, **acceptance rate: 20%**).

Grants

- 6/2024-5/2026 **Thao Minh Le**, Svetha Venkatesh: Computer-based video analysis for early detection of Cerebral Palsy (A\$100,000) by Research Foundation of Cerebral Palsy Alliance. **Role:** Lead Chief Investigator.
- 3/2025-2/2028 **Thao Minh Le**: Fine-grained Human Motion Understanding and Its Applications as part of Deakin University Postdoctoral Research Fellowship.
- 10/2025-6/2026 **Thao Minh Le**, Youakim Badr, Joseph Seemiller: Fine-grained Human Motion Understanding for Early Detection of Neurological Movement Disorders, OVPCC Research Seed Grant (\$8,000) by Penn State. **Role:** Principle Investigator.

Honours and Awards

- 4/2024 DAAD Alnet fellow for the Postdoctoral Networking Tour in AI, awarded by DAAD, Germany.
- 12/2023 Alfred Deakin Medal for Outstanding Doctoral Thesis 2021, awarded by Deakin University.
- 6/2020 Research featured in CVPR Daily magazine at CVPR 2020.
- 2018 - 2021 Deakin University Postgraduate Research Scholarship, awarded by Deakin University.
- 2016 - 2018 Japanese Government Scholarship, awarded by Japanese Government.
- 9/2014 Certificate of Merit for Excellent Undergraduate Students, awarded by HUST, Vietnam.
- 2013 - 2014 Samsung Talented Program Scholarship, awarded by Samsung Electronics Vietnam.
- 9/2012 Top 10 of SmartPhone Apps Challenge, organised by CyberAgent Ventures (Japan).

Professional Activities

Teaching

- 2025 DAAN862-Analytics Programming in Python, AI879-Machine Vision (Penn State Great Valley, USA)
- 2024-2025 COSC2531-Programming Fundamentals (RMIT University, Australia)

Student Supervision

- Current MS Students: Abdulla Aloufi, Mallikanrjun Channappagoudar, Elochukwu Egeonu, Christan Clarke, Renusree Bandaru (Penn State Great Valley);
PhD Students: Quang Hung Le, Y Huynh - Deakin University.
- Past Hoang Long Dang (PhD, 2024), Hoang Anh Pham (MSc, 2024), Xuan Tuyen Tran (PhD, 2025) (Deakin University); Nikolaj Normann Holm (PhD, 2024) - (Technical University of Denmark, External).

Invited Talks (Highlighted)

- 10/2024 Invited talk on “Vision Language Intelligence” at LMU Munich and Fraunhofer Research, Germany.
- 3/2022 Invited talk on “Reasoning over Vision and Language” at FPT AI lab, FPT Software, Vietnam.
- 12/2021 Co-organised “VietCap4H Challenge” at VLSP 2021, Vietnam.