

Thao Minh Le

Research Interest

My research interests focus on machine learning, computer vision, and visual reasoning. Possible applications include security and safety services, healthcare, and biomedical sciences.

Education

- Nov 2018 - **Ph.D. in Computer Science**
- May 2021 Applied Institute of Artificial Intelligence, Deakin University, Australia
Thesis: *Deep Neural Networks for Visual Reasoning*
- Sep 2016 - **M.Sc. in Computer Science**
- Sep 2018 Department of Computer Science, Tokyo Institute of Technology, Japan
Thesis: *F2CSkeleton: A Tailor-Made Approach for 3D Human Action Recognition*
- Aug 2009 - **B.A. in Electronics and Communication Engineering**
- Jun 2014 School of Electronics and Telecommunications, Hanoi University of Science&Technology (HUST), Vietnam
Thesis: *Automatic Face Recognition Using Local Images for Mobile Platforms*
Ranked 10th out of 526 in the department

Work Experience

- May 2021 - **Postdoctoral Research Fellow**
- Present Applied Institute of Artificial Intelligence, Deakin University, Australia
Position description: Initiate and conduct research to advance robot-human collaborative systems that benefit society and advance industry.
- May 2019 - **Research Assistant**
- Oct 2020 Applied Institute of Artificial Intelligence, Deakin University, Australia
Position description: Developed new machine learning techniques to predict the interaction between drugs and protein targets in drug discovery and development.
- Aug 2017 - **Research Intern**
- Apr 2018 Yahoo! JAPAN Research, Yahoo Japan Corporation, Tokyo, Japan
Position description: Utilized crowdsourcing to collect large-scale annotation data on text and images, and developed machine learning techniques for addressee recognition in human-computer interaction systems.
- May 2017 - **Research Assistant**
- Sep 2018 Tokyo Institute of Technology, Tokyo, Japan
Position description: Developed machine learning algorithms to understand human behaviors in videos.
- Jun 2014 - **Software Engineer**
- Aug 2016 Samsung Vietnam Mobile R&D Centre (SVMC), Hanoi, Vietnam
Position description: (1) Developed new product features for Samsung Smartphones applications, particularly for S-Note, Notes & Memos. (2) Improved performance, reliability of the applications across different devices. (3) Designed and improved internal tools for monitoring and collecting data from mobile devices.
- Jan 2014 - **Intern**
- May 2014 Samsung Vietnam Mobile R&D Centre (SVMC), Hanoi, Vietnam
Position description: Developed machine learning algorithms for automatic face recognition, planned and implemented the algorithms on the Android mobile platforms using the local images in a device's storage.

Nov 2011 - **Research Assistant**

Jan 2014 Integrated Circuits and System Laboratory, HUST, Hanoi, Vietnam

Projects: (1) Developed a computer vision algorithm and build up a surveillance system for fall detection of elderly people. (2) Developed a system that performs watermarking of audio data.

Honors and Awards

2018 - 2021 Deakin University Postgraduate Research Scholarship

2016 - 2018 Japanese Government (MEXT) Scholarship

2014 Certificate of Merit for Excellent Undergraduate Students by HUST

2014 Travel grant for international conference participation by the National Foundation for Science and Technology of Vietnam (NAFOSTED)

2013 - 2014 Samsung Talented Program Scholarship

2012 Top 10 of SmartPhone Apps Challenge jointly organized by HUST and CyberAgent, Japan

Publications (selected)

- 1 **Thao Minh Le**, Vuong Le, Svetha Venkatesh and Truyen Tran, “*Hierarchical Conditional Relation Networks for Multimodal Video Question Answering*”, International Journal of Computer Vision (IJCV).
- 2 Tri Minh Nguyen, Thin Nguyen, **Thao Minh Le**, Truyen Tran, “*GEFA: Early Fusion Approach in Drug-Target Affinity Prediction*”, *IEEE/ACM Transactions on Computational Biology and Bioinformatics*.
- 3 Long Hoang Dang, **Thao Minh Le**, Vuong Le, Truyen Tran, “*Hierarchical Object-oriented Spatio-Temporal Reasoning for Video Question Answering*”, In the 2021 International Joint Conference on Artificial Intelligence (IJCAI’21).
- 4 Long Hoang Dang, **Thao Minh Le**, Vuong Le, Truyen Tran, “*Object-Centric Representation Learning for Video Question Answering*”, In the 2021 International Joint Conference on Neural Networks (IJCNN’21).
- 5 Tri Minh Nguyen, Thin Nguyen, **Thao Minh Le**, Truyen Tran, “*GEFA: Early Fusion Approach in Drug-Target Affinity Prediction*”, In *Machine Learning for Structural Biology (MLSB) Workshop at NeurIPS’20*.
- 6 Long Hoang Dang, **Thao Minh Le**, Vuong Le, Truyen Tran, “*Object-Centric Relational Reasoning for Video Question Answering*”, In the *ECCV 2nd Workshop on Video Turing Test: Toward Human-Level Video Story Understanding*, Aug, 2020.
- 7 **Thao Minh Le**, Vuong Le, Svetha Venkatesh and Truyen Tran, “*Dynamic Language Binding in Relational Visual Reasoning*”, In Proceedings of the Twenty-Ninth International Joint Conference on Artificial Intelligence (IJCAI’20), pages 818-824.
- 8 **Thao Minh Le**, Vuong Le, Svetha Venkatesh and Truyen Tran, “*Neural Reasoning, Fast and Slow, for Video Question Answering*”, In Proceedings of the 2020 International Joint Conference on Neural Networks (IJCNN’20) (pp. 1-8), doi: 10.1109/IJCNN48605.2020.9207580. IEEE.
- 9 **Thao Minh Le**, Vuong Le, Svetha Venkatesh and Truyen Tran, “*Hierarchical Conditional Relation Networks for Video Question Answering*”, In Proceedings of the IEEE/CVF Conference on Computer Vision and Pattern Recognition (CVPR’20), pages 9972-9981. Top 5% accepted for Oral presentation.
- 10 **Thao Minh Le**, Nakamasa Inoue, Koichi Shinoda. “*A Fine-to-Coarse Convolutional Neural Network for 3D Human Action Recognition*”, 2018 British Machine Vision Conference (BMVC’18).
- 11 **Thao Le Minh**, Nobuyuki Shimizu, Takashi Miyazaki, Koichi Shinoda. “*Deep-learning-based multimodal addressee recognition in visual scenes with utterances*”, In Proceedings of the Twenty-Seventh International Joint Conference on Artificial Intelligence (IJCAI’18), pages 1546-1553.
- 12 Viet Dung Nguyen, **Minh Thao Le**, Anh Duc Do, Hoang Hai Duong, Toan Dat Thai, and Duc Hoa Tran. “*An efficient camera-based surveillance for fall detection of elderly people.*”, In Proceedings of the 9th IEEE Conference on Industrial Electronics and Applications (ICIEA’14), pages 994-997.

Presentations, Talks & Tutorials

Aug 2021 **Tutorial at IJCAI’21**

Co-delivered tutorial titled “Neural Machine Reasoning”. [\[Website\]](#)

Aug 2021 **Tutorial at KDD’21**

Co-delivered tutorial titled “From Deep Learning to Deep Reasoning”. [\[Website\]](#)

- Jan 2021 **Presentation at IJCAI'20**
Presentation on the paper titled "Dynamic Language Binding in Relational Visual Reasoning". [\[Video\]](#)
- Oct 2020 **Visual Question Answering and Visual Reasoning**
Invited public lecture at <https://www.reddit.com/r/2D3DAI/>. Recorded video available at [\[click here\]](#).
- Oct 2020 **Visual Question Answering and Visual Reasoning**
Guest lecture at VietAI Advanced Class on Computer Vision, Ho Chi Minh City, Vietnam. [\[Slides\]](#)
- Jun 2020 **Oral Presentation at CVPR'20**
Oral presentation on the paper titled "Hierarchical Conditional Relation Networks for Video Question Answering". [\[Video\]](#)
- Apr 2020 **Visual Question Answering**
Invited talk at Decision Systems Lab, University of Wollongong, Australia. [\[Slides\]](#)

Professional Services

- 2021 Invited reviewer: ICLR 2022, NeurIPS 2021, WACV 2021, the IEEE Transactions on Multimedia.
- 2020 Invited reviewer: ICLR 2021; Sub-reviewer ICML 2020, ECCV 2020, NeurIPS 2020.
- 2019 Invited reviewer: ICLR 2020; Sub-reviewer ICML 2019, IJCAI 2019, NeurIPS 2019, AAI 2020.

References

Prof. Svetha Venkatesh, (Ph.D. Supervisor)

ARC Australian Laureate Fellow, Alfred Deakin Professor, Deakin University, Australia

E-mail: svetha.venkatesh@deakin.edu.au

A/Prof. Truyen Tran, (Ph.D. Supervisor)

Associate Professor, Deakin University, Australia

E-mail: truyen.tran@deakin.edu.au

Prof. Koichi Shinoda, (M.Sc. Supervisor)

Professor, Tokyo Institute of Technology, Japan

E-mail: shinoda@c.titech.ac.jp