Truyen Tran (PhD)

Associate Professor | Head of AI, Health and Science

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Curriculum Vitae

■ Research Summary

My current research is focused on *machine learning, reasoning, and data-driven knowledge discovery.* Applications include computer vision, health, drug discovery, bioinformatics, materials science, chemistry, and software engineering.

■ Employment

Position	Start date	End date	Organization
Head of AI, Health and Science	5/2022	Present	Applied Artificial Intelligence Institute, Deakin University
Associate Professor	3/2018	Present	Applied Artificial Intelligence Institute & School of IT, Deakin University
(Senior) Lecturer	3/2014	2/2018	Centre for Pattern Recognition and Data Analytics & School of IT, Deakin University
Research Fellow	05/2009	2/2014	Centre for Pattern Recognition and Data Analytics, Deakin University & Department of Computing, Curtin University.
Research Consultant	03/2008	04/2009	Vietlabs
CIO	01/2008	5/2008	AVA Communications Group
Research Engineer	03/2002	03/2004	Research Institute of Posts and Telecommunications

■ Professional Activities

★ Membership

- The International Machine Learning Society

★Teaching

- *Data science* courses at Deakin University, 2017–2018.

- *Healthcare analytics*, a full intensive course at Department of Biomedical Engineering, Hanoi University of Science and Tech, Dec 2013.

- *Forecasting methods*, a short course for staff of EVNTelecom, 2003.

★ Consulting

- *Network anomaly detection*, contract for Telstra Australia, 2016-2019.

- *Communications demand forecasting in Vietnam 2003-2010*, contract for Saigon Postel, 2013.

- *Simulation of WLAN & mobile database systems*, services for PhD students, 2012-2013.

★ Supervision (Current)

- Minh-Thang Nguyen (PhD, Deakin), *Quantum machine learning*, Start: Sep 2022.

- Xuan-Tuyen Tran (PhD, Deakin, with Vuong Le), *Video understanding*, Start: Jun 2022.

- Hoang-Anh Pham (PhD, Deakin), *Video dialog*, Start: May 2021.

- Tien-Kha Pham (PhD, Deakin), *A theoretical investigation into AI*, Start: May 2021.

- Hoang-Long Dang (PhD, Deakin), *Learning to reason visually*, Start: Feb 2020.

- Hung Tran (PhD, Deakin, with Vuong Le), *Human behaviour analysis on video*, Start: Jan 2020.

- Duc Nguyen (PhD, Deakin), *Representation learning for time-series*, Start: Feb 2019.

★ Supervision (Past)

- Tri Nguyen (PhD, Deakin, with Thin Nguyen), Decoding the drug-target interaction mechanism using deep learning, **Completed**: 2022.

- Dung Nguyen (PhD, Deakin), *Towards social AI: Roles and theory of mind*, **Completed**: 2022.

- Hoang Thanh-Tung (PhD, Deakin), *Toward generalizable deep generative models*, **Completed:** 2021.

- Thao Minh Le (PhD, Deakin), *Deep neural networks for visual reasoning*, **Completed:** 2021, after 2.5 years.

- Romero de Morais (PhD, Deakin, with Vuong Le), *Human behaviour understanding in computer vision*, **Completed:** 2021.

- Hung Le (PhD, Deakin), *Memory and attention in deep learning*, Deakin University, **Completed:** 2020, after just 2 years! **Winner of Deakin's Thesis Award** 2020.

- Kien Do (PhD, Deakin), *Novel deep architectures for representation learning*, Deakin University, **Completed:** 2020.

- Trang Pham (PhD, Deakin), *Recurrent neural networks for structured data*, Deakin University. **Completed:** 2019.

- Shivapratap Gopakumar (PhD, Deakin), *Machine learning in healthcare: An investigation into model stability*, Deakin University. **Completed:** 2017.

- Tu Dinh Nguyen (PhD, Deakin), *Structured representation learning from complex data*, Deakin University. **Completed:** 2015.

★ Reviewing services

Grants: Health Research Council of **New Zealand** (HRC) 2021
Australian Research Council (ARC), **Australia** 2020-2021
National Health and Medical Research Council (NHMRC), **Australia** 2018
Netherlands Organization for Scientific Research, **The Netherland**s 2017
Abertawe Bro Morgannwg University Health Board & Swansea Medical School Joint Study Review Committee, **UK**, 2016
Natural Sciences and Engineering Research Council (NSERC), **Canada** 2015
National Foundation for Science and Technology Development (NAFOSTED), **Vietnam** 2015-2019

Journals: ACM Intelligent Systems and Technology (2016)
ACM Transactions on Internet Technology (2020)
ACM Transactions on Multimedia Computing, Communications and Applications (2010)
ACM Transactions on Knowledge Discovery from Data (2017-2019)
Artificial Intelligence Journal (2010)
Automated Software Engineering (2017)
Briefings in Functional Genomics (2020)
Computer Communications (2015)
Engineering Applications of Artificial Intelligence (2014)
IEEE Access (2016)
IEEE Transactions on Knowledge and Data Engineering (2012, 2016)
IEEE Transactions on Multimedia (2009-2014)
IEEE Transactions on Neural Networks and Learning Systems (2015)
IEEE Transactions on Pattern Analysis and Machine Intelligence (2021)
IEEE Transactions on Signal and Information Processing over Networks (2015)
IEEE Signal Processing Letters (2014)
Journal of Artificial Intelligence Research (2021)
Knowledge-based System (2016)

Neurocomputing (2014, 2015)
Science and Technology of Advanced Materials (2019)

Conferences: (Senior TPC)
AAAI Conference on Artificial Intelligence (AAAI: 2022-2023)
International Joint Conference on Artificial Intelligence (IJCAI: 2021)
Asian Conference on Machine Learning, (ACML: 2013-2019)

Conferences: (TPC)
International Conference on Learning Representation (ICLR: 2018-2023)
International Joint Conference on Machine Learning (ICML: 2017–2022)
Neural Information Processing Systems (NIPS: 2017-2022)
AAAI Conference on Artificial Intelligence (AAAI: 2005, 2008, 2016–2023)
International Joint Conference on Artificial Intelligence (IJCAI: 2009, 2015–2022)
ACM International Conference on Information and Knowledge Management (CIKM: 2015, 2016)
ACM Multimedia, 2009 (ACMM'09)
ACM SIGIR, 2010 (SIGIR'10)
Asian Conference on Machine Learning (ACML: 2013-2014)
European Conference on Computer Vision (ECCV: 2020)
Pacific-Asia Conference on Knowledge Discovery and Data Mining, 2013 (PAKDD'13)

★ Panelist

- VietAI Summit, Nov 2019.

- South East Asian Machine Learning School, Depok, Greater Jakarta, Indonesia, July 2019.

- Workshop on Semantic Machine Learning at IJCAI-2017, Melbourne, Australia.

- Workshop on Deep Learning for Speech Recognition and Related Applications at NIPS-2009, Vancouver, Canada.

★ External Thesis Examination

- *A study of visual question answering for blind people*, PhD thesis, JAIST, Japan, 2021.

- *Structural and Temporal Relationship Modelling of Electronic Health Records for Medical Risk Prediction*, PhD thesis, Monash University, Australia, 2021.

- *Multi-modal Information Extraction and Fusion with Convolutional Neural Networks for Classification of Scaled Images*, PhD thesis, University of Canberra, Australia, 2021.

- *A Study on Deep Learning for Natural Language Generation in Spoken Dialogue Systems*, PhD thesis, JAIST, Japan, 2018.

- *Radar Signal Representation and Classification*, PhD thesis, University of Wollongong, Australia, 2013.

★ Invited talks & tutorials

- *Neural machine reasoning*, Invited talk at HUST's AI NOW Conference, Nov 2021.

- *Robust visual reasoning*, Invited talk at ICONIP, Nov 2021.

- *Artificial intelligence for accelerating drug discovery*, AI and Future of Work Festival, Deakin University, Sept 2021.

- *Machine learning and reasoning for drug discovery,* Tutorial at ECML-PKDD, Sept 2021.

- *Neural machine reasoning,* Tutorial at IJCAI, August 2021.

- *From deep learning to deep reasoning,* Tutorial at KDD, August 2021.

- *Deep learning 1.0 and beyond,* Tutorial at IEEE SSCI, Canberra, Dec 2020.

- *Machine reasoning,* Invited talk at Faculty of IT, Monash University, August 2020.

- *AI in Covid-19 pandemic*, Invited talk at Vietnamese Academic Network in Japan, May 2020.

- *Machines that learn to talk about what they see*, Keynote at NICS'19, Hanoi, Vietnam, Dec 2019.

- *Climate change: Challenges and AI-driven solutions*, Workshop at Swinburne Vietnam, Hanoi, Vietnam, Dec 2019.

- *Modern AI for drug discovery*, VietAI Summit, Nov 2019.

- *Deep learning for biomedicine,* Lecture at South East Asian Machine Learning School, Depok, Greater Jakarta, Indonesia, July 2019.

- *Deep Learning for genomics*, Workshop at Institute of Big Data, Hanoi, Vietnam, June 2019.

- *Representation learning on graphs*, Keynote at MAPR'19, Ho Chi Minh City, Vietnam, May 2019.

- *AI for matters*, Phenikaa University, Hanoi, Vietnam, Jan 2019.

- *Deep learning for biomedicine: Genomics and drug design*, Institute of Big Data, Hanoi, Vietnam, Jan 2019.

- *Advances in Neural Turing Machines,* CafeDSL, University of Wollongong, Aug 2018.

- *Deep learning for episodic interventional data,* ISCB-ACS 2018, Melbourne, Aug 2018.

- *Deep learning for astronomy* at Harley Wood School for Astronomy, Ballarat, Australia, June 2018.

- *Deep learning for biomedical discovery and data mining,* Tutorial at PAKDD'18, Melbourne, Australia, June 2018

- *Deep learning for biomedicine,* Tutorial at ACML'17, Seoul, Korea, Nov 2017

- *Deep neural nets for healthcare*, Amazon Seattle, Feb 2017.

- *Deep learning for detecting anomalies and software vulnerabilities*, Academy of Cryptography Techniques, Hanoi, Vietnam, Jan 2017.

- *Deep architecture engineering*, VNU University of Engineering and Technology, Jan 2017.

- *Deep architecture engineering*, Hanoi University of Science and Technology, Jan 2017.

- *Deep learning and applications to non-cognitive domains*, at AusDM'16 (Canberra), Dec 2016.

- *Deep learning and applications to non-cognitive domains*, at AI'16 (Hobart), Dec 2016.

- *AI for healthcare*, Emerging Big Data Technologies Summit 2016 (EBDTS'16), Melbourne, Dec 2016

- *Introduction to PRaDA: Research and industry engagement*, FPT Institute, Dec 2014.

- *Research at PRaDA*, Institute of IT, Vietnam National University of Hanoi, Jan 2014.

- *Healthcare analytics: A machine learning perspective*, Deakin IT School Retreat, Dec 2013.

- *Representation learning*, Canberra University, Dec 2012.

- *When computing meets statistics*, Department of Statistics, Hanoi University of Science, VNU, Mar 2009.

- *On some optimisation problems in structured pattern recognition*, OptiSciCom09, Ba Vi, Hanoi, Vietnam, Mar 2009.

- *RecSys: Recommender Systems*, BarCamp Hanoi, Mar 2009.

■ Publications

Journals

1. Tri Minh Nguyen, Thin Nguyen, Tom Quinn and **Truyen Tran**, "Explaining black box drug target prediction through model agnostic counterfactual samples", accepted to *IEEE/ACM Transactions on Computational Biology and Bioinformatics*.

2. Tri Minh Nguyen, Thin Nguyen and **Truyen Tran**, "Mitigating cold start problems in drug-target affinity prediction with interaction knowledge transferring", accepted to *Briefings in Bioinformatics*.

3. Tri Minh Nguyen, Thin Nguyen, Thao Minh Le and **Truyen Tran**, "GEFA: Early fusion approach in drug-target affinity prediction", *IEEE/ACM Transactions on Computational Biology and Bioinformatics*, 2021, DOI: 10.1109/TCBB.2021.3094217.

4. Santu Rana, Wei Luo, **Truyen Tran**, Svetha Venkatesh, Paul Talman, Thanh G Phan, Dinh Phung, Benjamin B Clissold, "Application of machine learning techniques to identify data reliability and factors affecting outcome after stroke using electronic administrative records", *Frontiers in Neurology*, 2021, doi: 10.3389/fneur.2021.670379.

5. Thao Minh Le, Vuong Le, Svetha Venkatesh, and **Truyen Tran**, "Hierarchical conditional relation networks for multimodal video question answering", *International Journal of Computer Vision*, 2021, DOI: 10.1007/s11263-021-01514-3.

6. Thin Nguyen, Samuel C. Lee, Thomas P. Quinn, Buu Truong, Xiaomei Li, **Truyen Tran**, Svetha Venkatesh, Thuc Duy Le, "PAN: Personalized Annotation-based Networks for the prediction of breast cancer relapse", *IEEE/ACM Transactions on Computational Biology and Bioinformatics*, 2021, DOI: 10.1109/TCBB.2021.3076422.

7. Binh Nguyen, Vuong Le, Catherine Morgan, Nadia Badawi, **Truyen Tran** and Svetha Venkatesh, "A Spatio-temporal Attention-based Model for Infant Movement Assessment from Videos", *IEEE Journal of Biomedical and Health Informatics*, 2021, 25(10):3911-3920. doi: 10.1109/JBHI.2021.3077

8. Morakot Choetkiertikul, Hoa Khanh Dam, **Truyen Tran**, Trang Pham, Aditya Ghose, and Tim Menzies, "Automatically recommending components for issue reports using deep learning", *Empirical Software Engineering*, 26.2 (2021): 1-39.

9. Vuong Le, Thomas P. Quinn, **Truyen Tran**, and Svetha Venkatesh, "Deep in the bowel: Highly interpretable neural encoder-decoder networks predict gut metabolites from gut microbiome", *BMC Genomics* 21, 2020

10. Brisa Fernandes, Chandan Karmakar, Ryad Tamouza, **Truyen Tran**, Nora Hamdani, Hakim Laouamri, Jean-Romain Richard, Robert Yolken, Michael Berk, Svetha Venkatesh, Marion Leboyer, "Precision Psychiatry with immunological and cognitive biomarkers: A multi-domain prediction for the diagnosis of Bipolar Disorder or Schizophrenia using machine learning", *Nature's Translational Psychiatry,* 10.1 (2020): 1-13.

11. Adham Beykikhoshk, Thomas P. Quinn, Samuel C. Lee, **Truyen Tran**, and Svetha Venkatesh, "DeepTRIAGE: interpretable and individualised biomarker scores using attention mechanism for the classification of breast cancer sub-types", *BMC Medical Genomics* 13, no. 3 (2020): 1-10.

12. Kien Do, **Truyen Tran**, Thin Nguyen and Svetha Venkatesh, "Attentional multilabel learning over graphs: A message passing approach", *Machine Learning*, March 2019, DOI: 10.1007/s10994-019-05782-6.

13. Hoa Khanh Dam, **Truyen Tran**, Trang Pham, SW Ng, John Grundy, Aditya Ghose, "Automatic feature learning for predicting vulnerable software components", *IEEE Transactions on Software Engineering,* Nov 2018.

14. Duong-Nguyen Nguyen, Tien-Lam Pham, Viet-Cuong Nguyen, Tuan-Dung Ho, **Truyen Tran**, Keisuke Takahashi and Hieu-Chi Dam. "Committee machine that votes for similarity between materials", *IUCrJ*, Vol 5. no. 6, Nov 2018.

15. Kien Do, **Truyen Tran**, and Svetha Venkatesh, "Energy-Based anomaly detection for mixed data", *Knowledge and Information Systems*, November 2018, Volume 57, Issue 2, pp 413–435, DOI: 10.1007/s10115-018-1168-z.

16. Morakot Choetkiertikul, Hoa Khanh Dam, **Truyen Tran**, Aditya Ghose, John Grundy, "Predicting delivery capability in iterative software development", *IEEE Transactions on Software Engineering*, Volume: 44 , Issue: 6 , June 1 2018, Page(s): 551 - 573, DOI: 10.1109/TSE.2017.2693989.

17. Morakot Choetkiertikul, Hoa Khanh Dam, **Truyen Tran**, Trang Pham, Aditya Ghose, and Tim Menzies, "A deep learning model for estimating story points", *IEEE Transactions on Software Engineering,* Jan 2018, DOI: 10.1109/TSE.2018.2792473.

18. Trang Pham, **Truyen Tran**, Dinh Phung, Svetha Venkatesh, "Predicting healthcare trajectories from medical records: A deep learning approach", *Journal of Biomedical Informatics*, Vol 69, Pages 218--229, 2017, DOI:10.1016/j.jbi.2017.04.001.

19. **Truyen Tran**, Dinh Phung, Hung Bui, Svetha Venkatesh, "Hierarchical semi-Markov conditional random fields for deep recursive sequential data", *Artificial Intelligence*, Volume 246, May 2017, Pages 53–85.

20. Morakot Choetkiertikul, Hoa Khanh Dam, **Truyen Tran**, Aditya Ghose, "Predicting the delay of issues with due dates in software projects", *Empirical Software Engineering*, June 2017, Volume 22, Issue 3, pp 1223–1263, doi: 10.1007/s10664-016-9496-7.

21. Phuoc Nguyen, **Truyen Tran**, Nilmini Wickramasinghe, Svetha Venkatesh, "Deepr: A convolutional net for medical records", *IEEE Journal of Biomedical and Health Informatics*, vol. 21, no. 1, pp. 22–30, Jan. 2017, doi: 10.1109/JBHI.2016.2633963.

22. Wei Luo; Dinh Phung; **Truyen Tran**; Sunil Gupta; Santu Rana; Chandan Karmakar; Alistair Shilton; John Yearwood; Nevenka Dimitrova; Tu Bao Ho; Svetha Venkatesh; Michael Berk, "Guidelines for developing and reporting of machine learning predictive models in biomedical research", *JMIR,* 18(12), 2016, DOI: 10.2196/jmir.5870

23. Shaowu Liu, Gang Li, **Truyen Tran** and Jiang Yuan, "Preference relation-based Markov random fields for recommender systems", *Machine Learning*, DOI: 10.1007/s10994-016-5603-7, 2016.

24. **Truyen Tran**, Dinh Phung, Svetha Venkatesh, "Collaborative filtering via sparse Markov random fields", *Information Sciences*, Volume 369(10) November 2016, Pages 221–237, DOI: 10.1016/j.ins.2016.06.027

25. Shivapratap Gopakumara, **Truyen Tran**, Wei Luo, Dinh Phung, Svetha Venkatesh, "Forecasting daily patient outflow from a ward having no real-time clinical data", *JMIR*, Vol 4, No 3 (2016): Jul. 2016, pp:e25, doi: 10.2196/medinform.5650.

26. Wei Luo, Emily Huning, **Truyen Tran,** Dinh Phung, and Svetha Venkatesh**,** "Screening for post 32-week preterm birth risk: How helpful is routine perinatal data collection?", *Heliyon,* Volume 2, Issue 6, June 2016, Article e00119*,* doi: 10.1016/j.heliyon.2016.e00119

27. Wei Luo, Richard Harvey, **Truyen Tran,** Dinh Phung, Svetha Venkatesh and Jason Connor , "Consistency of the Health of the Nation Outcome Scales (HoNOS) at inpatient-to-community transition", *BMJ Open*, 2016;6:e010732 doi:10.1136/bmjopen-2015-010732.

28. Chandan Karmakar, Wei Luo, **Truyen Tran**, Michael Berk, and Svetha Venkatesh, "Predicting risk of suicide attempt using history of physical illnesses from electronic medical records", *JMIR Mental Health,* Vol 3, No 3 (2016): Jul-Sept.

29. Tu D. Nguyen, **Truyen Tran**, D. Phung, and S. Venkatesh, "Graph-induced restricted Boltzmann machines for document modeling", *Information Sciences*, 2016, vol 328, pp. 60-75 DOI: 10.1016/j.ins.2015.08.023.

30. Wei Luo , Thin Nguyen, Melanie Nichols, **Truyen Tran**, Santu Rana, Sunil Gupta, Dinh Phung, Svetha Venkatesh, Steve Allender, "Is demography destiny? Application of machine learning techniques to accurately predict population health outcomes from a minimal demographic dataset", *PLoS ONE*, May 4, 2015, DOI: 10.1371/journal.pone.0125602.

31. **Truyen Tran**, Dinh Phung, Svetha Venkatesh, "Modelling human preferences for ranking and collaborative filtering: A probabilistic ordered partition approach", *Knowledge and Information System (KAIS)*, May 13, 2015, DOI: 10.1007/s10115-015-0840-9

32. Thin Nguyen, **Truyen Tran**, Wei Luo, Sunil Gupta, Santu Rana, Dinh Phung, Melanie Nichols, Lynne Millar, Svetha Venkatesh, Steven Allender, "Web search activity data accurately predicts population chronic disease risk in the United States", *Journal of Epidemiology & Community Health*, 2015, doi:10.1136/jech-2014-204523.

33. **Truyen Tran**, Tu D. Nguyen, D. Phung, and S. Venkatesh, "Learning vector representation of medical objects via EMR-driven nonnegative restricted Boltzmann machines (*e*NRBM)", *Journal of Biomedical Informatics (JBI)*, 2015, pii: S1532-0464(15)00014-3. doi: 10.1016 / j.jbi.2015.01.012.

34. **Truyen Tran**, Wei Luo, Dinh Phung, Sunil Gupta, Santu Rana, Richard Lee Kennedy, Ann Larkins, Svetha Venkatesh, "A framework for feature extraction from hospital medical data with applications in risk prediction", *BMC bioinformatics* 15 (1), 2014, DOI: 10.1186/s12859-014-0425-8.

35. **Truyen Tran**, Dinh Phung, Svetha Venkatesh, "Tree-based iterated local search for Markov random fields with applications in image analysis", *Journal of Heuristics*, 2014, DOI: 10.1007/s10732-014-9270-1.

36. Shivapratap Gopakumar, **Truyen Tran**, Tu Dinh Nguyen, Dinh Phung, and Svetha Venkatesh, "Stabilizing high-dimensional prediction models using feature graphs", *IEEE Journal of Biomedical and Health Informatics*, 2014, DOI: 10.1109/JBHI.2014.2353031.

37. Santu Rana**, Truyen Tran**, Wei Luo, Richard Lee Kennedy, Dinh Phung, Svetha Venkatesh, "Predicting unplanned readmission after myocardial infarction from routinely collected administrative hospital data", *Australian Health Review*, 38(4):377–382, Sept 2014, doi: 10.1071/AH14059.

38. **Truyen Tran**, Wei Luo, Dinh Phung, Richard Harvey, Michael Berk, Richard Lee Kennedy, Svetha Venkatesh, "Risk stratification using data from electronic medical records better predict suicide risks than clinician assessments", *BMC Psychiatry,* 14:76, 2014, doi:10.1186/1471-244X-14-76. **Winner of the CRESP Early Career Researcher Best Award.**

39. Sunil Gupta, **Truyen Tran**, Wei Luo, Dinh Phung, Richard Lee Kennedy, Adam Broad, David Campbell, David Kipp, Madhu Singh, Mustafa Khasraw, Leigh Matheson, David M Ashley, Svetha Venkatesh, "Machine-learning prediction of cancer survival: a retrospective study using electronic administrative records and a cancer registry", *BMJ Open*, 2014, doi:10.1136/bmjopen-2013-004007

40. **Truyen Tran**, Dinh Phung, Wei Luo, and Svetha Venkatesh, "Stabilized sparse ordinal regression for medical risk stratification", *Knowledge and Information Systems*, 2014, DOI: 10.1007/s10115-014-0740-4.

Peer-reviewed conferences and workshops

(NOTE: Peer-reviewed conferences in Computer Science are rigorous and with low acceptance rate. The impact is generally higher than that of journals, judged by h5-index in Google Scholar Metric.)

1. 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.

2. Kien Do, Haripriya Harikumar, Hung Le, Dung Nguyen, **Truyen Tran**, Santu Rana, Dung Nguyen, Willy Susilo, Svetha Venkatesh. "Towards effective and robust neural Trojan defenses via input filtering", *ECCV*, 2022.

3. Hung Tran, Vuong Le, Svetha Venkatesh, **Truyen Tran**, "Persistent-transient duality in human behavior modeling", *CVPR Precognition Workshop*, 2022.

4. Kha Pham, Hung Le, Man Ngo, **Truyen Tran**, Bao Ho, Svetha Venkatesh, "Generative pseudo-inverse memory", *ICLR*, 2022.

5. Dung Nguyen, Phuoc Nguyen, Svetha Venkatesh, **Truyen Tran**, "Learning to transfer role assignment across team sizes", *AAMAS*, 2022.

6. Dung Nguyen, Phuoc Nguyen, Hung Le, Kien Do, Svetha Venkatesh, **Truyen Tran**, "Learning theory of mind via dynamic traits attribution", *AAMAS*, 2022.

7. Hung Le, Thommen K George, Majid Abdolshah, **Truyen Tran**, Svetha Venkatesh, "Model-based episodic memory induces dynamic hybrid controls", *NeurIPS'21*.

8. Asjad Khan, Aditya Ghose, Hoa Dam, Hung Le, **Truyen Tran**, Kien Do, "DeepProcess: Supporting business process execution using a MANN-based recommender system", *ICSOC'21*.

9. Dang Nguyen, Sunil Gupta, Trong Nguyen, Santu Sana, Phuoc Nguyen, **Truyen Tran**, Ky Le, Shannon Ryan, Svetha Venkatesh, "Knowledge distillation with distribution mismatch", *ECML-PKDD'21*.

10. Phuoc Nguyen, **Truyen Tran**, Ky Le, Sunil Gupta, Santu Sana, Dang Nguyen, Trong Nguyen, Shannon Ryan, Svetha Venkatesh, "Fast conditional network compression using Bayesian HyperNetworks", *ECML-PKDD'21*.

11. Phuoc Nguyen, **Truyen Tran**, Sunil Gupta, Santu Rana, Hieu-Chi Dam, Svetha Venkatesh, "Variational hyper-encoding networks", *ECML-PKDD'21*.

12. **Truyen Tran**, Vuong Le, Hung Le, Thao M Le, "From deep learning to deep reasoning", *KDD'21*.

13. Duc Nguyen, Binh Nguyen, Phuoc Nguyen, **Truyen Tran**, "High-order representation learning for multivariate time series forecasting", *ICML'21 Workshop on Time-Series*, 2021.

14. Tri Minh Nguyen, Thomas P Quinn, Thin Nguyen, **Truyen Tran**, "Counterfactual explanation with multi-agent reinforcement learning for drug target prediction", *ICML'21 Workshop on Interpretable Machine Learning in Healthcare*, 2021.

15. Kien Do, **Truyen Tran**, Svetha Venkatesh, "Clustering by maximizing mutual information across views", *ICCV'21*.

16. Long Hoang Dang, Thao Minh Le, Vuong Le, and **Truyen Tran**. "Object-centric representation learning for video question answering", *IJCNN'21*.

17. Long Hoang Dang, Thao Minh Le, Vuong Le, and **Truyen Tran**. "Hierarchical object-oriented spatio-temporal reasoning for video question answering", *IJCAI'21*.

18. Romero Morais, Vuong Le, Svetha Venkatesh and **Truyen Tran**, "Learning asynchronous and sparse human-object interaction in videos", *CVPR'21*, 19-25 June, Virtual.

19. Kien Do, **Truyen Tran** and Svetha Venkatesh, "Semi-supervised learning with variational Bayesian inference and maximum uncertainty regularization", *AAAI'21*.

20. Hung Tran, Vuong Le and **Truyen Tran**, "Goal-driven long-term trajectory prediction", *WACV'21*, Jan 5-9 2021, Online.

21. Tri Minh Nguyen, Thin Nguyen, Thao Minh Le and **Truyen Tran**, "GEFA: Early fusion approach in drug-target affinity prediction", *NeurIPS 2020 Workshop on Machine Learning for Structural Biology (MLSB)*, Online.

22. Phuoc Nguyen, **Truyen Tran**, Sunil Gupta, Santu Rana, Hieu-Chi Dam, Svetha Venkatesh, "HyperVAE: A minimum description length variational hyper-encoding network", *NeurIPS 2020 Workshop on Meta-Learning*, Online.

23. Hoang Thanh-Tung, Truyen Tran, "Toward a generalization metric for deep generative models", *NeurNIPS 2020 1st Workshop on I Can't Believe It's Not Better*, Online.

24. Duc Nguyen, Phuoc Nguyen, Kien Do, Santu Rana, Sunil Gupta, **Truyen Tran**, "Unsupervised anomaly detection on temporal multiway data", *2020 IEEE Symposium Series on Computational Intelligence* (SSCI) (SSCI 2020), Canberra, 1-4 Dec 2020.

25. Long Hoang Dang, Thao Minh Le, Vuong Le and **Truyen Tran**, "Object-centric relational reasoning for video question answering", *The 2nd Workshop on Video Turing Test: Toward Human-Level Video Story Understanding*, ECCV Online, 28 August. 2020.

26. Dung Nguyen, **Truyen Tran**, Svetha Venkatesh, "Theory of mind with guilt aversion facilitates cooperative reinforcement learning", *ACML'20*, November 18-20 2020, Bangkok, Thailand.

27. Romero Morais, Vuong Le, **Truyen Tran** and Svetha Venkatesh, "Learning to abstract and predict human actions", *BMVC'20*, 7-10 Sept, Virtual.

28. Hung Le, **Truyen Tran**, Svetha Venkatesh, "Self-attentive associative memory", *ICML'20*, July 12-18, Online.

29. Thao Minh Le, Vuong Le, Svetha Venkatesh, and **Truyen Tran**, "Dynamic language binding in relational visual reasoning", *IJCAI'20*, July 11-17, Yokohama, Japan.

30. Hoang Thanh-Tung, **Truyen Tran**, "On catastrophic forgetting and mode collapse in GANs", *IJCNN'20*, Jul 19-24 Glasgow, United Kingdom.

31. Thommen G Karimpanal, Santu Rana, Sunil Gupta, **Truyen Tran**, Svetha Venkatesh, "Learning transferable domain priors for safe exploration in reinforcement learning", *IJCNN'20*, Jul 19-24 Glasgow, United Kingdom.

32. Thao Minh Le, Vuong Le, Svetha Venkatesh, and **Truyen Tran**, "Neural reasoning, fast and slow, for video question answering", *IJCNN'20*, Jul 19-24 Glasgow, United Kingdom.

33. Thao Minh Le, Vuong Le, Svetha Venkatesh, and **Truyen Tran**, "Hierarchical conditional relation networks for video question answering", *CVPR'20*, Jun 16-18 Seattle, Washington, United States.

34. Hung Le, **Truyen Tran**, Svetha Venkatesh, "Neural stored-program memory", *ICLR'20*, April 26-30, Addis Ababa, Ethiopia.

35. Kien Do, **Truyen Tran**, "Theory and evaluation metrics for learning disentangled representations", *ICLR'20*, April 26-30, Addis Ababa, Ethiopia.

36. Kien Do, **Truyen Tran**, Svetha Venkatesh, "Graph transformation policy network for chemical reaction prediction", *KDD'19*, Anchorage, Alaska, USA.

37. Romero Morais, Vuong Le, Budhaditya Saha, **Truyen Tran**, Moussa Reda Mansour, Svetha Venkatesh, "Learning regularity in skeleton trajectories for anomaly detection in videos", *CVPR'19*, June 16-20, Long Beach, CA, USA.

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39. Hoang Thanh-Tung, **Truyen Tran**, Svetha Venkatesh, "Improving generalization and stability of Generative Adversarial Networks", *ICLR 2019*, May 6-9, New Orleans, USA.

40. Hung Le, **Truyen Tran**, Svetha Venkatesh, "Learning to remember more with less memorization", *ICLR 2019*, May 6-9, New Orleans, USA.

41. Hoa Khanh Dam, **Truyen Tran**, John Grundy, Aditya Ghose, Yasutaka Kamei, "Towards effective AI-powered agile project management", *ICSE 2019 New Ideas and Emerging Results*, 25 May - 31 May 2019, Montréal, QC, Canada.

42. Phuoc Nguyen, **Truyen Tran**, Sunil Gupta, Santu Rana, Svetha Venkatesh, "Incomplete conditional density estimation for fast materials discovery", *SDM 2019*, May, Calgary, Alberta, Canada.

43. Trang Pham, **Truyen Tran**, Svetha Venkatesh, "Neural reasoning for chemical-chemical interaction", *NeurIPS'18 Workshop on Machine Learning for Molecules and Materials*, Montreal, Canada.

44. Hung Le, **Truyen Tran**, Thin Nguyen, Svetha Venkatesh, "Variational memory encoder-decoder", *NeurIPS'18*, Montreal, Canada.

45. Hoang Thanh-Tung, **Truyen Tran**, Svetha Venkatesh, "On catastrophic forgetting and mode collapse in Generative Adversarial Networks", *ICML Workshop on Theoretical Foundations and Applications of Deep Generative Models*, 2018.

46. Hung Le, **Truyen Tran**, Svetha Venkatesh, "Dual memory neural computer for asynchronous two-view sequential learning", *KDD'18,* August, London, UK.

47. Trang Pham, **Truyen Tran**, Svetha Venkatesh, "Graph memory networks for molecular activity prediction", *ICPR'18*, August, Bejing, China.

48. Kien Do, **Truyen Tran**, Svetha Venkatesh, "Knowledge graph embedding with multiple relation projections", *ICPR'18*, August, Bejing, China.

49. Phuoc Nguyen, **Truyen Tran**, Svetha Venkatesh, "Resset: A recurrent model for sequence of sets with applications to electronic medical records", *IJCNN'18*, July, Rio de Janeiro, Brazil.

50. Hung Le, **Truyen Tran** and Svetha Venkatesh, "Dual control memory augmented neural networks for treatment recommendations", *PAKDD'18*, June 2018, Melbourne, Australia.

51. Hoa Khanh Dam, **Truyen Tran**, Trang Pham and Aditya Ghose, "Explainable software analytics", *ICSE 2018 New Ideas and Emerging Results*, May 27 - 3 June 2018, Gothenburg, Sweden.

52. Morakot Choetkiertikul, Hoa Khanh Dam, **Truyen Tran**, Trang Pham and Aditya Ghose, "Predicting components for issue reports using deep learning with information retrieval", *International Conference on Software Engineering (ICSE'18) - Poster Track*, May 27 - 3 June 2018, Gothenburg, Sweden.

53. Trang Pham, **Truyen Tran**, Svetha Venkatesh, "Graph memory networks for molecular activity prediction", *NIPS Workshop on Deep learning for physical sciences,* 2017.

54. Trang Pham, **Truyen Tran**, Svetha Venkatesh, "A generic neural architecture for multiple inputs and outputs", *NIPS Workshop on Women in Machine Learning (WiML 2017),* 2017.

55. Phuoc Nguyen, **Truyen Tran**, Svetha Venkatesh, "Finding algebraic structure of care in time: A deep learning approach", *NIPS Workshop on Machine Learning for Health (ML4H)*, 2017.

56. Phuoc Nguyen, **Truyen Tran**, Svetha Venkatesh, "Deep learning to attend to risk in ICU*", IJCAI'17 Workshop on Knowledge Discovery in Healthcare II: Towards Learning Healthcare Systems (KDH 2017)*, Melbourne, Australia, August.

57. Trang Pham, **Truyen Tran**, Hoa Dam, Svetha Venkatesh, "Graph classification via deep learning with virtual nodes", *IJCAI'17 Third Representation Learning for Graphs Workshop (ReLiG 2017)*, Melbourne, Australia, August.

58. Kien Do, **Truyen Tran**, Svetha Venkatesh, "Learning recurrent matrix representation", *IJCAI'17 Third Representation Learning for Graphs Workshop (ReLiG 2017)*, Melbourne, Australia, August.

59. Trang Pham, **Truyen Tran**, Dinh Phung, Svetha Venkatesh, "Column networks for collective classification", *AAAI'17*.

60. Kien Do, **Truyen Tran**, Dinh Phung, Svetha Venkatesh, "Outlier detection on mixed-type data: An energy-based approach", *International Conference on Advanced Data Mining and Applications (ADMA 2016)*. **Best Student Runner-up Paper Award.**

61. Shivapratap Gopakumara, **Truyen Tran**, Dinh Phung, Svetha Venkatesh, "Stabilizing linear prediction models using autoencoder", *International Conference on Advanced Data Mining and Applications (ADMA 2016)*.

62. Shivapratap Gopakumara, **Truyen Tran**, Wei Luo, Dinh Phung, Svetha Venkatesh, "Forecasting patient outflow from wards having no real-time clinical data", *ICHI'16*.

63. Hoa Khanh Dam, **Truyen Tran** and Trang Pham, "A deep language model for software code", *FSE Workshop on NL+SE,* 2016.

64. Hoa Khanh Dam, **Truyen Tran**, John Grundy and Aditya Ghose, "DeepSoft: A vision for a deep model of software", *FSE Vision and Reflection Track,* 2016.

65. Trang Pham, **Truyen Tran**, Dinh Phung, Svetha Venkatesh, "Faster training of very deep networks via p-norm gates", *ICPR'16*.

66. **Truyen Tran**, Wei Luo, Dinh Phung, Jonathan Morris, Kristen Rickard, Svetha Venkatesh, "Preterm birth prediction: Deriving stable and interpretable rules from high dimensional data", *Conference on Machine Learning in Healthcare*, LA, USA Aug 2016.

67. **Truyen Tran**, Dinh Phung and Svetha Venkatesh, "Neural choice by elimination via highway networks", *PAKDD workshop on Biologically Inspired Techniques for Data Mining (BDM'16)*, April 19-22 2016, Auckland, NZ.

68. Trang Pham, **Truyen Tran**, Dinh Phung and Svetha Venkatesh, "DeepCare: A deep dynamic memory model for predictive medicine", *PAKDD'16*, April 19-22 2016, Auckland, NZ.

69. Shaowu Liu, Gang Li, **Truyen Tran**, Jiang Yuan, "Preference relation-based Markov random fields", *ACML'15*, November 20-22, 2015, Hong Kong.

70. Morakot Choetkiertikul, Daniel Avery, Hoa Khanh Dam, **Truyen Tran** and Aditya Ghose, "Who will answer my question on Stack Overflow?", *24th Australasian Software Engineering Conference (ASWEC 2015)*, Adelaide, Australia, September 28 - October 1, 2015.

71. Morakot Choetikertikul, Hoa Khanh Dam, **Truyen Tran**, Aditya Ghose, "Predicting delays in software projects using networked classification", *30th IEEE/ACM International Conference on Automated Software Engineering*, November 9–13, 2015 Lincoln, Nebraska, USA.

72. Morakot Choetikertikul, Hoa Khanh Dam, **Truyen Tran**, Aditya Ghose, "Characterization and prediction of issue-related risks in software projects", *MSR'15*, May 16–17, Florence, Italy. **Winner of ACM SIGSOFT Distinguished Paper Award.**

73. Shivapratap Gopakumar, **Truyen Tran**, Tu Dinh Nguyen, Dinh Phung, and Svetha Venkatesh, "Stabilizing sparse Cox model using statistic and semantic structures in electronic medical records", *PAKDD'15*, Ho Chi Minh City, Vietnam, May 2014. **Runner-up for Best Student Paper Award.**

74. Tu Dinh Nguyen, **Truyen Tran**, Dinh Phung, and Svetha Venkatesh, "Tensor-variate Restricted Boltzmann Machines", *AAAI'15*.

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76. T Nguyen, D Phung, W Luo, **T Tran**, S Venkatesh, "2014 iPoll: Automatic polling using online search", *15th International Conference on Web Information System Engineering (WISE 2014)*, 2014.

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78. Tu Dinh Nguyen, **Truyen Tran**, Dinh Phung, and Svetha Venkatesh, "Latent patient profile modelling and applications with Mixed-Variate Restricted Boltzmann Machine", *Advances*

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