Truyen Tran (PhD)

Professor | Head of AI, Health and Science

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Curriculum Vitae

■ Research Summary

I am **pushing the frontiers of AI** by: ▷*Unlocking* intelligence; ▷*Designing* human-compatible intelligent machines; ▷*Transforming* physical and digital fields through AI.

I have recently **made major contributions** in: ▷*Differentiable programming*: Extending the capacity and expressiveness of neural networks through Turing-like architectures; ▷*Multimodal machine reasoning*: Enabling the System II capacity through learning, program synthesis and memory. Testbeds: visual QA, visual dialog and toward digital companions; ▷ *Artificial social intelligence*: Instilling the social capacity into intelligent agents through theory of mind and social reasoning, and advancing multi-agent RL; ▷*Machine learning for health*: Improving quality and efficiency through data-driven diagnosis and prognosis; ▷*Drug discovery*: Accelerating through drug repurposing and more precise drug-target binding; ▷*Machine learning for materials sciences*: Rapid exploration of the vast chemical & materials space, and enabling inverse design; ▷*Learning with sample efficiency*: GAN, discovery, disentanglement learning and semi-supervised learning.

The **current focuses** are: ▷*AI Future* consisting of (1) scaling out with AI as new digital species; (2) reasoning with System II capability; (3) alignment for truth, values and safety. ▷*AI for Science* consisting of (4) AI scientists for automated discovery; (5) physical sciences focusing on molecular and materials design; (6) life sciences focusing on drug design and multi-omics modelling. ▷*AI for Health* consisting of (7) AI doctors for humanising AI; (8) medical image analysis; and (9) Modelling health trajectories & longevity.

■ Education and Qualifications

Graduate Certificate (Higher Education Learning and Teaching), 2016	Deakin University, Australia
Doctor of Philosophy (Computer Science), 2008	Curtin University, Australia
Postgraduate Diploma (Computer Science), 2004	Curtin University, Australia
Bachelor of Science (Computer Science), 2001	University of Melbourne, Australia

■ Employment

Position	Start date	End date	Organization	Roles
Professor	1/2024	Present	Deakin University	▷Build research powerhouses that benefit science and humanity.
Head of AI, Health and Science	5/2022	Present	Deakin University	▷Lead AI research, improve health and accelerate science.
Associate Professor	3/2018	12/2023	Deakin University	▷Lead research in AI that benefits science and humanity.
Lecturer	3/2014	2/2018	Deakin University	▷Lead deep learning and apps. in biomedicine and science.
Research Fellow	5/2012	2/2014	Deakin University	▷Push frontier of deep learning and recommender systems.
Postdoc & consultant	3/2008	4/2012	Curtin University	▷Push frontier of machine learning and recommender systems.
Research Engineer	3/2002	3/2004	Research Inst. of Posts and Teleco.	▷Lead R&D in optimization, simulation, and forecasting.

■ Awards and Recognition

2018 Excellent publications award, School of IT, Deakin University

2016 ADMA Best Student Paper Runner-up

2015 PAKDD Best Student Paper Runner-up

2015 ACM SIGSOFT Distinguished Paper Award at MSR'15.

2014 Best Paper Award, CRESP Early Career Researcher.

2014 Title of Kaggle Master.

2014 Third position in the Kaggle's Galaxy Zoo Challenge.

2013 Top 5% in the leader board of Heritage Health Prize, April 2011 - April 2013, 3-million dollar challenge to predict hospitalization (Team Vietlabs in the leader board: http://www.heritagehealthprize.com/c/hhp/leaderboard).

2011 Top 5% in the leader board of the Yahoo! Learning-To-Rank Challenge among thousands of teams worldwide (Chapelle, "Yahoo! Learning to Rank Challenge Overview", *JMLR: Workshop and Conference Proceedings* 14 (2011) 1-24).

2009 Best Paper Award, Runner up, at UAI.

2008 Chancellor Commendation for PhD thesis, Curtin University.

2005 Three-year scholarship for Doctor of Philosophy at Curtin University.

2004 One-year scholarship for Postgraduate Diploma at Curtin University.

2000 Member of Honour List, Faculty of Science, University of Melbourne.

1999 Australian Government (AusAID) Scholarship for BSc at the University of Melbourne.

1997 Silver Medal at the International Physics Olympiad (IPhO), Canada.

1997 First Prize at the National Physics Olympiad, Vietnam

■ Patents - Transfer of Technology

- **Truyen Tran**, Santu Rana, Quoc-Dinh Phung, Wei Luo, and Svetha Venkatesh, "Extracting medical features for risk prediction", Filed in Australia Dec 2013, number: AU2013902191. Filed internationally: June 2014, number: PCT/AU2014/050074.
- Co-founder of iHosp, a health analytics company.

■ Grants: >$25M

- Jonathan Golledge *et al.*, "AAA-MEDICAL: Integrating synergistic expertise for better treatment of Abdominal Aortic Aneurysm", $5M, *NHMRC Synergy Grant*, 2024-2029, **Truyen Tran** as CI on Machine Learning and IT Lead.
- Jonathan Golledge *et al.*, "Improving clinical pathways for abdominal aortic aneurysm through incorporating biomarkers", $1M, *MRFF Cardiovascular Health Mission*, 2023-2026. **Truyen Tran** as CI on Machine Learning.
- **Truyen Tran** and Vuong Le, "Fidgety movement detection for robust and interpretable cerebral palsy risk assessment", $300K, *The Research Foundation, Cerebral Palsy Alliance*, 2022-2025.
- **Truyen Tran** *et al.*, "Coupled self-supervised learning and deep reasoning for improved processing of noisy and dynamic multimodal data from multiple sources", $815K, *Australian Department of Defence*, 2022-2024.

- Svetha Venkatesh *et al.*, "A generic framework for verifying machine learning algorithms", $360K, *ARC Discovery*, 2021-2023. **Truyen Tran** as CI on Deep Learning.
- Helen Christensen *et al.*,"Optimising treatments in mental health using AI", $5M, *MRFF AI in Health*, 2021-2026. **Truyen Tran** as CI on Deep Learning Tech.
- Svetha Venkatesh *et al.*, "Defence applied AI experiential CoLab", $1M, *Australian Department of Defence*, 2020. **Truyen Tran** as CI on Deep Learning Tech.
- John Grundy *et al.*, "ARC Research Hub for Digital Enhanced Living", $3M*, ARC Industrial Transformation Research Hubs*, 2018–2022. **Truyen Tran** as CI on AI.
- Thanh-Hai Dang, **Truyen Tran**, Xuan-Hieu Phan, Mai-Vu Tran, Cao-Cuong Dang, "Studying and developing advanced machine learning based models for extracting chemical/drug-disease relations from biomedical literature", Approx. $54K, *National Foundation for Science and Technology Development (NAFOSTED), Vietnam Government*, 2017–2018.
- Svetha Venkatesh, **Truyen Tran** and Dinh Phung, "Accuracy of machine scoring of fidgety movements from high risk infant populations", $134K, *Cerebral Palsy Alliance, Australia*, 2016–2017.
- Hoa Khanh Dam, Aditya Ghose, **Truyen Tran**, John Grundy, "Predicting hazardous software components using deep learning", $100K AUD, *Samsung GRO*, Japan, 2016–2017.
- Svetha Venkatesh, Dinh Phung, Alistair Shilton, Budhaditya Saha, Wei Luo, **Truyen Tran**, Sunil Gupta, Santu Rana, Thin Nguyen, Trung Le, Tu Nguyen, Vu Nguyen, Cheng Li, "Telstra Centre of Excellence in Big Data and Machine Learning", $1.6M AUD, *Telstra, Australia*, 2016–2020.
- Svetha Venkatesh, Dinh Phung, Wei Luo, **Truyen Tran**, Sunil Gupta, Santu Rana, Stewart Greenhill, Thi Duong, Budhaditya Saha, "Advanced data analytics for care management of chronic disease", $760K, *Barwon Health*, 2013-2017.
- Svetha Venkatesh, Wei Luo, Sunil Gupta, Thi Duong, **Truyen Tran**, "Improving cancer care", $200K, *Western Alliance*, 2016-2017.
- **Truyen Tran** (Lead CI), "Building a simulator of mail sorting machine", $12K, 2003, *Grant administered by Research Institute of Post and Telecommunication*, Vietnam.

■ Professional Activities

★Government consulting

- *COVID-19 forecasting for Ho Chi Minh City*, Council of Ho Chi Minh City, Vietnam, July-August 2021.
- *A Rational Plan for Rational AI in Vietnam, 2019-2029*, Ministry of Information and Communications, Oct 2018.

★ Industry consulting

- *Network anomaly detection*, Telstra Australia, 2016-2019.
- *Communications demand forecasting in Vietnam 2003-2010*, Saigon Postel, 2013.

★ Membership

- The International Machine Learning Society

★Teaching

- *Deep learning*, short courses for Viettel Digital Talents, 2021–2023.
- *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.

★ Supervision (Current)

- Long Tran (PhD, Deakin, with Dr Phuoc Nguyen), *Causal inference*, Start: Oct 2024.
- Thong Bach (PhD, Deakin), *Test-time alignment AI,* Start: Sept 2024.
- Dat Ho (PhD, Deakin, with Dr Shannon Ryan), *Physics-informed GNNs for space mechanics*, Start: Sept 2024.
- Linh La (PhD, Deakin, with Dr Sherif Abbas), *Physics-informed ML for materials science*, Start: Sept 2024.
- Giang Do (PhD, Deakin), *Scaling Large Reasoning Models*, Start: June 2024.
- Quang-Hung Le (PhD, Deakin, with Dr Thao Le), *Toward instruction-following navigation*, Start: Nov 2023.
- Minh-Khoa Le (PhD, Deakin), *Structured learning and reasoning*, Start: Nov 2023.
- Minh-Thang Nguyen (PhD, Deakin), *Machine learning in data-poor knowledge-rich regime*, Start: March 2023.
- Xuan-Tuyen Tran (PhD, Deakin), *Video understanding*, Start: March 2022.

★ **Supervision (Past)**

- Tien-Kha Pham (PhD, Deakin), *Associative memory in neural networks*, **Completed**: 2024. **Nominee of Deakin's Thesis Award** 2025; **Nominee for CORE Distinguished Dissertation Award** 2024-2025.
- Hung Tran (PhD, Deakin, with Dr Vuong Le), *Human behaviours understanding in video: Goals, dual-processes and commonsense*, **Completed**: 2024.
- Mojtaba Eftekharnia (PhD, Deakin, with A/Prof Robert Kerr), *The Manufacturing of High Energy Density Lithium-metal Batteries*, **Completed**: 2024.
- Hoang-Long Dang (PhD, Deakin), *Language-guided visual reasoning via deep neural networks*, **Completed**: 2023. **Nominee of Deakin's Thesis Award** 2024; **Nominee for CORE Distinguished Dissertation Award** 2023-2024.
- Hoang-Anh Pham (Master by Research, Deakin), *Video-grounded dialog: Models and applications*, **Completed**: 2023.
- Duc Nguyen (PhD, Deakin), *Learning dependency structures through time using neural networks*, **Completed**: 2023.
- Tri Nguyen (PhD, Deakin, with Dr Thin Nguyen), *Decoding the drug-target interaction mechanism using deep learning*, **Completed**: 2022. **Nominee of Deakin's Thesis Award** 2022.
- Dung Nguyen (PhD, Deakin), *Towards social AI: Roles and theory of mind*, **Completed**: 2022. **Nominee of Deakin's Thesis Award** 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. **Winner of Deakin's Thesis Award** 2021.
- Romero de Morais (PhD, Deakin, with Dr Vuong Le), *Human behaviour understanding in computer vision*, **Completed:** 2021.
- Tang Thanh Nguyen (PhD, Deakin, with Prof Sunil Gupta), *On Practical Reinforcement Learning: Provable Robustness, Scalability, and Statistical Efficiency*, **Completed:** 2021. **Winner of Deakin's Thesis Award** 2021.
- Hung Le (PhD, Deakin), *Memory and attention in deep learning*, **Completed:** 2020, after just 2 years! **Winner of Deakin's Thesis Award** 2020.
- Kien Do (PhD, Deakin), *Novel deep architectures for representation learning*, **Completed:** 2020.
- Trang Pham (PhD, Deakin), *Recurrent neural networks for structured data*, **Completed:** 2019.

- Shivapratap Gopakumar (PhD, Deakin), *Machine learning in healthcare: An investigation into model stability*, **Completed:** 2017.
- Tu Dinh Nguyen (PhD, Deakin), *Structured representation learning from complex data*, **Completed:** 2015.
- Xin Zhang (PhD, Deakin, with A/Prof Sonny Pham at Curtin University), Sparse representation for face images, **Completed:** 2015.

★ Reviewing services

Grants: Rutherford Discovery Fellowship of **New Zealand**, 2023
Health Research Council of **New Zealand** (HRC) 2021
Australian Research Council (ARC), **Australia** 2020-2021, 2023
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 Transactions on Autonomous and Adaptive Systems (2022-2023)
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 (2021-2022)
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: 2022-2025)
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: 2017–2023)
Neural Information Processing Systems (NIPS: 2017-2023)
IEEE Conference on Computer Vision and Pattern Recognition (CVPR: 2023)
International Conference on Computer Vision (ICCV: 2023)
AAAI Conference on Artificial Intelligence (AAAI: 2005, 2008, 2016–2021)
International Joint Conference on Artificial Intelligence (IJCAI: 2009, 2015–2023)
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

- *Disentangled representation learning for spatio-temporal data*, PhD thesis, RMIT, Australia 2023.
- *Efficient deep neural networks for 3-D scene understanding of unstructured environments*, PhD thesis, University of Wollongong, Australia 2023.
- *Learning from multimodal time-series data with minimal supervision*, PhD thesis, RMIT, Australia 2023.
- *A study of visual question answering for blind people*, PhD thesis, JAIST, Japan, 2021.
- *Structural and temporal relationship modeling 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

- *AI4Science: The 5th paradigm*, Invited talk @Ton Duc Thang University, HCM City, July 2025.
- *Future-Ready: Pioneering AI for Global Challenges*, Leadership Talk at Deakin's 50 Years Event in HCMC, Vietnam, July 2025.
- *AI for Digital Design and Engineering: An Overview,* @School of Engineering, Deakin University, June 2025,
- *Ethical AI via Alignment,* Keynote at AI Forum: Leveraging Artificial Intelligence for Business, Geelong, June 2025,
- *Agentic AI and the Alignment Problem: Risks Across Levels and Horizons*, Australia-Vietnam Strategic Technologies Symposium, Hanoi, June 2025.
- *AI4Science: The 5th paradigm*, Invited talk @VNU HN, March 2025.
- *AI: The tipping point*, Webinar @VASEA, March 2025.
- *Physics, mind and AI*, Bronze Bragg Lecture, Adelaide, Feb 2025.
- *The 2024 Nobel Prize in Physics*, Public lecture at Vietnam National University, Hanoi, Vietnam Dec 2024.
- *Robust AI as digital species,* Keynote at ACML Reliable and Trustworthy Artificial Intelligence Workshop, Hanoi, Vietnam Dec 2024
- *Compositional Visual Reasoning via Large Vision-Language Models*, Keynote at ACCV Worksop on Robust, Trustworthy and Cost-Optimized Learning Across Multiple Modalities: Theory, Algorithms, and Applications (LAMM), Hanoi Vietnam Dec 2024.
- *UNITED: A suite of neural architectures for scalable reasoning over temporal multimodal data*, Defence Artificial Intelligence 2024 Symposium, Melbourne, Australia Nov 2024.
- *Automated GMA – Deakin, Australia*, CP360 Summit, Pisa, Italy Sep 2024.
- *Gen AI, present & future*, (Moderator) at Generative AI Summit, HCM City, Vietnam Aug 2024
- *The shifting landscape of modern AI,* Talk at @VNU-HCM US, August 2024.

- *AI in the post-deep learning era*, Talk at VNU-HCM US, April 2024.
- *Generative AI: Shifting the AI landscape*, Talk at DAIRNet Defence AI Seminar Series, Dec 2023.
- *Multimodal Generative AI*, Defence Human Sciences Symposium, Brisbane. Nov 2023
- *UNITED for multichannel temporal data*, Defence Human Sciences Symposium, Brisbane. Nov 2023
- *Generative AI to accelerate discovery of materials*, Keynote at the The 11th Pacific Rim International Conference on Advanced Materials and Processing, Jeju, Korea. Nov 2023.
- *Deep learning and reasoning: Recent advances*, Tutorial at VIASM Summer School in Deep Learning, July 2023.
- *AI for automated materials discovery via learning to represent, predict, generate and explain*, Invited talk at Thuyloi University, May 2023.
- *Deep analytics via learning to reason,* Keynote at the 16th International Conference on Advanced Computing and Analytics, Nov 2022.
- *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, Sherif Abdulkader Tawfik, **Truyen Tran**, Sunil Gupta, Santu Rana, Svetha Venkatesh, "Efficient symmetry-aware materials generation via hierarchical generative flow networks", *Digital Discovery*, 2025.

2. Chayan Banerjee, Kien Nguyen, Olivier Salvado, **Truyen Tran**, Clinton Fookes, "Physics-informed Machine Learning for Medical Image Analysis", *ACM Computing Surveys*, 2025.

3. Giang Do, Kha Pham, Hung Le, **Truyen Tran**, "On the Role of Discrete Representation in Sparse Mixture of Experts", *Transactions on Machine Learning Research*, 2025.

4. Alicia J. Spittle, Peter B. Marschik, [...], **Truyen Tran**, Dajie Zhang, Elyse Passmore, "Towards universal early screening for cerebral palsy: a roadmap for automated General Movements Assessment", *eClinicalMedicine*, Volume 86, 2025, DOI: 10.1016/j.eclinm.2025.103379.

5. Mojtaba Eftekharnia, Tri Nguyen, Maria Forsyth, **Truyen Tran**, Patrick C. Howlett, Robert Kerr, "Early Cycle Life Prediction of Lithium-Metal Batteries with the Aid of Machine Learning", *Batteries & Supercaps* (2025): DOI: 10.1002/batt.202500261

6. Tri Minh Nguyen, Sherif Abdulkader Tawfik, **Truyen Tran**, Sunil Gupta, Santu Rana, and Svetha Venkatesh, "The search for superionic solid-state electrolytes using a physics-informed generative model", *Materials Horizons* (2025).

7. Karimpanal, Thommen George, Laknath Buddhika Semage, Santu Rana, Hung Le, **Truyen Tran**, Sunil Gupta, and Svetha Venkatesh. "LaGR-SEQ: Language-guided reinforcement learning with sample-efficient querying." *Neural Computing and Applications* (2025), 10.1007/s00521-025-11156-y

8. Que, Ngo T., Anh D. Phan, **Truyen Tran**, Pham T. Huy, Mai X. Trang, and Thien V. Luong. "Machine learning-integrated modeling of thermal properties and relaxation dynamics in metallic glasses." *Materials Today Communications* (2025): 112287.

9. Hieu-Chi Dam, Tien-Sinh Vu, Minh-Quyet Ha, **Truyen Tran**, Hiori Kino, Yukio Takahashi, Adam Mukharil Bachtiar, Duc-Anh Dao, Shuntaro Takazawa, Nozomu Ishiguro, Yuhei Sasaki, Masaki Abe, Hideshi Uematsu, Naru Okawa, Kyosuke Ozaki, Kazuo Kobayashi, Yoshiaki Honjo, Haruki Nishino, Yasumasa Joti, and Takaki Hatsui, "PID3Net: A Deep Learning Approach for Single-Shot Coherent X-ray Diffraction Imaging of Dynamic Phenomena", *npj Computational Materials* (2025).

10. Sherif Abdulkader Tawfik, Linh La, Tri Nguyen, **Truyen Tran**, Sunil Gupta, and Svetha Venkatesh. "Scale matters: Simulation of nanoscopic dendrite initiation in the lithium solid electrolyte interphase using a machine learning potential." *Journal of Materials Chemistry A* (2025).

11. Sherif Abdulkader Tawfik, Tri Minh Nguyen, Salvy P. Russo, **Truyen Tran**, Sunil Gupta, and Svetha Venkatesh. "Embedding material graphs using the electron-ion potential: Application to material fracture". *Digital Discovery* (2024).

12. Romero Morais, **Truyen Tran**, Caroline Alexander, Natasha Amery, Catherine Morgan, Alicia Spittle, Vuong Le et al. "Fine-grained fidgety movement classification using active learning". *IEEE Journal of Biomedical and Health Informatics* (2024).

13. Hung Le, Dung Nguyen, Kien Do, Svetha Venkatesh, and **Truyen Tran**. "Plug, play, and generalize: Length extrapolation with pointer–augmented neural memory." *Transactions on Machine Learning Research*, 10/2024.

14. Nhung Nghiem, Nick Wilson, Jeremy Krebs, and **Truyen Tran**. "Predicting the risk of diabetes complications using machine learning and social administrative data in a country with ethnic inequities in health: Aotearoa New Zealand". *BMC medical informatics and decision making* 24, no. 1 (2024): 274.

15. Binh Nguyen-Thai, Vuong Le, Ngoc-Dung T. Tieu, **Truyen Tran**, Svetha Venkatesh, Naeem Ramzan, "Learning evolving relations for multivariate time series forecasting", *Applied Intelligence,* DOI 10.1007/s10489-023-05220-0, 2024.

16. Vu, Tien-Sinh Vu; Ha, Minh-Quyet; Nguyen, Duong-Nguyen; Dam, Hieu-Chi Dam; Nguyen, Viet-Cuong; Abe, Yukihiro; **Tran, Truyen**; Tran, Huan; Kino, Hiori; Miyake, Takashi; Tsuda, Koji. "Towards understanding structure–property relations in materials with interpretable deep learning", *npj Computational Materials*, 9, Article No.: 215. 2023.

17. Long Hoang Dang, Thao Minh Le, Vuong Le, Tu Minh Phuong, and **Truyen Tran.** "Dynamic reasoning for Movie QA: A character-centric approach", *IEEE Transactions on Multimedia*, DOI:10.1109/TMM.2023.3322321, 2023.

18. Karimpanal, Thommen George, Hung Le, Majid Abdolshah, Santu Rana, Sunil Gupta, **Truyen Tran**, and Svetha Venkatesh. "Balanced Q-learning: Combining the influence of optimistic and pessimistic targets". *Artificial Intelligence*, 2023.

19. Romero Morais, Vuong Le, Catherine Morgan, Alicia Spittle, Nadia Badawi, Jane Valentine, Elizabeth M Hurrion, Paul A Dawson, **Truyen Tran**, and Svetha Venkatesh, "Robust and interpretable general movement assessment using fidgety movement detection", *IEEE Journal of Biomedical and Health Informatics, 2023.*

20. Kit Huckvale, Leonard Hoon, Eileen Stech, Jill Newby, Wu-Yi Zheng, Jin Han, Rajesh Vasa, Sunil Gupta, Scott Barnett, Manisha Senadeera, Stuart Cameron, Stefanus Kurniawan, Akash Agarwal, Joost Funke Kupper, Joshua Asbury, David Willie, Alasdair Grant, Henry

Cutler, Bonny Parkinson, Antonio Ahumada-Canale, Joanne R Beames, Rena Logothetis, Marya Bautista, Jodie Rosenberg, Artur Shvetcov, Thomas Quinn, Andrew Mackinnon, Santu Rana, **Truyen Tran**, Simon Rosenbaum, Kon Mouzakis, Aliza Werner-Seidler, Alexis Whitton, Svetha Venkatesh, Helen Christensen, "Protocol for a bandit-based response adaptive trial to evaluate the effectiveness of brief self-guided digital interventions for reducing psychological distress in university students: The Vibe Up Study." *BMJ Open* (2023).

21. Tri Minh Nguyen, Thin Nguyen and **Truyen Tran**, "Learning to discover medicines", *International Journal of Data Science and Analytics,* DOI: 10.1007/s41060-022-00371-8.

22. Tawfik, Sherif; Nguyen, Phuoc; **Tran, Truyen**; Walsh, Tiffany; Venkatesh, Svetha, "Machine learning-aided exploration of ultrahard materials", *The Journal of Physical Chemistry C*, 126.37 (2022): 15952-15961.

23. Tri Minh Nguyen, Thin Nguyen, Tom Quinn and **Truyen Tran**, "Explaining black box drug target prediction through model agnostic counterfactual samples", *IEEE/ACM Transactions on Computational Biology and Bioinformatics,* 2022, DOI: 10.1109/TCBB.2022.3190266.

24. Tri Minh Nguyen, Thin Nguyen and **Truyen Tran**, "Mitigating cold start problems in drug-target affinity prediction with interaction knowledge transferring", *Briefings in Bioinformatics,* 23(4) (2022)

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86. 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.**

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93. **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.

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96. 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.

97. 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.

98. 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.**

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