TRAN TUNG LAM

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RESEARCH INTERESTS

My research focuses on machine learning models that emulate human learning, emphasizing generalizability, robustness to adversarial attacks, and the ability to learn continuously from multiple sources. Recently, I have been focusing on model unlearning and model merging.

EDUCATION

M.S. in Data Science, Hanoi University of Science and Technology (HUST) **2021 - 2023**

- GPA: $3.83/4$
- Thesis: Continual Learning with Knowledge Distillation and Representation Learning.
- Advisor: Prof. Than Quang Khoat.

B.S. in Computer Science, Hanoi University of Science and Technology (HUST) **2017 - 2021**

- GPA: $3.56/4$
- Thesis: Continual Learning based on Node sparsity using Variational Dropout.
- Advisor: Dr. Linh Ngo Van.

EXPERIENCE

Research Resident at VinAI Research **2022 - NOW**

- Study task interaction in Continual Learning through the lens of Knowledge conflict, Invariant learning and Model Robustness. Also work on Multi-task learning and Robust contrastive learning.
- Participated in a Large Language Models Merging project.
- Advisors: Dr. Tran Minh Toan & Prof. Le Minh Trung.

Data Science Lab - SOICT, HUST **2020 - 2023**

- Applied Bayesian Inference methods, Probabilistic models, Knowledge Transfer to Continual Learning.
- Advisors: Dr. Than Quang Khoat & Dr. Ngo Van Linh.

PUBLICATIONS

- Hoang Phan*, **Lam Tran***, Quyen Tran*, Trung Le, “Enhancing Domain Adaptation through Prompt Gradient Alignment”. In *Advances in Neural Information Processing Systems*, 2024.
- **Lam Tran**, Viet Nguyen, Phi Hoang, Khoat Than. "Sharpness and Gradient Aware Minimization for Memory-based Continual Learning". In *Symposium On Information and Communication Technology*, 2023.
- Quyen Tran*, **Lam Tran***, Linh Chu, Linh Ngo Khoat Than. "From Implicit to Explicit feedback: A deep neural network for modeling sequential behaviours and long-short term preferences of online users". In *Neurocomputing*, 2022.

PREPRINTS

- Ngoc N Tran*, **Lam Tran***, Hoang Phan, Anh Bui, Tung Pham, Toan Tran, Dinh Phung, Trung Le. "A Theoretical Guarantee for Robust Contrastive Learning". Under review.
- Hoang Phan*, **Lam Tran***, Ngoc Tran, Nhat Ho, Dinh Phung, Trung Le. "Improving Multi-task Learning via Seeking Task-based Flat Regions". Under review.
- Anh The Nguyen, **Lam Tran**, Anh Tong, Tuan-Duy H. Nguyen, Toan Tran."CASUAL: Conditional Support Alignment for Domain Adaptation with Label Shift". Under review.
- Quyen Tran, **Lam Tran**, Khoat Than, Toan Tran, Dinh Phung, Trung Le. "KOPPA: Improving Prompt-based Continual Learning with Key-Query Orthogonal Projection and Prototype-based One-Versus-All". Under review.
- Khanh Doan, Quyen Tran, **Lam Tran**, Tuan Nguyen, Dinh Phung, Trung Le. "Class-Prototype Conditional Diffusion Model with Gradient Projection for Continual Learning". Under review.

AWARDS & HONORS

- Best Paper Runner Up in The 12th International Symposium On Information and Communication Technology, 2023.
- Scholarship for Master and Doctoral training in Vietnam, Vingroup Innovation Foundation, 2021.
- Consolidation prize in Vietnamese Mathematical Olympiad competition, 2017.
- Bronze medal in International Tournament of Towns (ITOT), 2016.
- Gold medal in Math, The competition for Excellent Students of Major high schools in the Northern delta and Coastal areas, 2015.
- Math competition at Hung Vuong Summer Camp: Gold medal 2015, Silver medal 2016.

SKILLS

- **Teaching:** Teaching assistant in Machine Learning classes at HUST and Vin Bigdata.
- **Languages & Technologies:** Python, C++, Pytorch, Numpy, Pandas, Flask, Matplotlib, Seaborn, SkLearn, Git.
- **English:** Fluent, IELTS 7.5.

REFERENCES

- **Dr. Trung Le**: Lecturer, Data Science and AI, Monash University .
  Email: trunglm@monash.edu
- **Dr. Toan Tran**: Research scientist, Machine Learning, Vinai research.
  Email: v.toantm3@vinai.io
- **Prof. Khoat Than**: Associate Professor School of Information and Communication Technology, HUST.
  Email: khoattq@soict.hust.edu.vn