Hieu Vu

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RESEARCH INTERESTS

My research interests span machine learning, deep learning, and their applications, with a current focus on graph representation learning and deep generative models (VAEs, GANs, Diffusion) for graph and sequential data. I also have prior experience in active learning, Bayesian neural networks, and distributionally robust optimization.

ACADEMIC BACKGROUND

- **Ph.D. in Computer Science**   Aug. 2022 – May, 2027 (Expected)
  University of Iowa   *Iowa City, USA*
  Advised by Prof. Bijaya Adhikari

- **B.Sc. in Information Systems**   Aug. 2014 – Mar. 2019
  Hanoi University of Science and Technology (HUST)   *Hanoi, Vietnam*
  Excellence degree, GPA 3.63/4.0

RESEARCH WORKS

- Efficient and Effective Implicit Dynamic Graph Neural Network
  *Yongjian Zhong, **Hieu Vu**, Tianbao Yang, Bijaya Adhikari*   *KDD, 2024*

- Distributionally Robust Fair Principal Components via Geodesic Descents
  ***Hieu Vu**, Toan Tran, Man-Chung Yue, Viet Anh Nguyen*   *ICLR, 2022*

- Bayesian Metric Learning for Robust Training of Deep Models under Noisy Labels
  ***Hieu Vu**, Toan Tran, Gustavo Carneiro*   *Preprint, 2020*

- MAP Estimation With Bernoulli Randomness, and Its Application
  to Text Analysis and Recommender Systems
  *Xuan Bui, **Hieu Vu**, Oanh Nguyen, Khoat Than*   *IEEE Access, 2020*

RESEARCH EXPERIENCES

- **Research Resident**   Nov. 2019 – Jan. 2022
  VinAI Research - Advised by Dr. Toan Tran and Dr. Viet Anh Nguyen   *Hanoi, Vietnam*

  - Main research topics: Bayesian Neural Networks, Active Learning, Distributionally Robust Optimization. Relevant backgrounds: Linear Algebra, Probability & Statistics, Deep Generative Models, Robust Optimization
  - Achievement: be the first author in a publication at ICLR 2022

- **Undergraduate Research Assistant**   Jun. 2017 – Jun. 2019
  Data Science Lab, HUST - Advised by Dr. Khoat Than   *Hanoi, Vietnam*

  - Main research topics: Topic models, Hierarchical models. Relevant backgrounds: Linear Algebra, Probability & Statistics, Topic modeling methods, Graphical models
  - Achievement: be the second author in a publication at IEEE Access 2020

TECHNICAL SKILLS

- Programming Languages: Python, Java, JavaScript, and C/C++

- Relevant Frameworks: Pandas, Scikit-Learn, PyTorch, Matplotlib

- Web-based: HTML/CSS/JS, NodeJS, ReactJS

- Databases: MySQL, MongoDB, Aerospike

INDUSTRIAL EXPERIENCES

- **AI Engineer**   Jan. 2022 – June. 2022
  VinAI Research   *Hanoi, Vietnam*

    - Develop models and apply Active Learning techniques for 2D object detection tasks using YOLOv5
    - Finetune a pre-trained model for a LIDAR-based 3D object detection project on internal datasets, which gained $\sim 460\%$ improvement
    - Do clustering analysis on internal datasets for similarity search and outlier detection using traditional clustering methods such as KMeans, Gaussian mixture, Hierarchical clustering, and DBSCAN

- **Software developer**   Jun. 2018 – Aug. 2019
  VC Corporation   *Hanoi, Vietnam*

    - Build a recommendation system for news articles using a Doc2Vec model, deploy with Flash
    - Build micro-service Restful web server with Java-Jersey framework
    - Build a cache server with Aerospike delivering data from MySQL database

ACADEMIC SERVICE

- International workshop on Epidemiology meets Data Mining and Knowledge discovery (epiDAMIK Workshop @ KDD 2023): *Program Committee member and reviewer*
- SIAM Conference on Data Mining (SDM): *Subreviewer for the 2023 edition.*
- International Conference on Knowledge Discovery and Data Mining (KDD): *Subreviewer for the 2023, 2024 editions.*
- International Conference on Information and Knowledge Management (CIKM): *Subreviewer for the 2024 edition.*

AWARDS AND CERTIFICATES

- **Excellence scholarship for the academic year of 2018-2019**
  Granted for top 1% highest CPA students of School of Information and Communication Technology, HUST

REFERENCES

Dr. Bijaya Adhikari   **Dr. Toan Tran**
The University of Iowa   *VinAI Research, Hanoi, Vietnam*
✉ bijaya-adhikari@uiowa.edu   ✉ v.toantm3@vinai.io

Dr. Viet Anh Nguyen   **Dr. Khoat Than**
Chinese University of Hong Kong   *Hanoi University of Science and Technology*
✉ nguyen@se.cuhk.edu.hk   ✉ khoattq@soict.hust.edu.vn