

Ngoc Bui

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RESEARCH INTERESTS

My research interests are machine learning and deep learning with a focus on their responsible use in real-world systems where humans and high measurement uncertainties exist in the loop. Recently, my research has focused on multimodal large language models and graph representation learning.

EDUCATION

- **Ph.D. in Computer Science** 2023 – 2028 [expected]
Yale University
- Advisor: Prof. Rex Ying
- **M.S. in Data Science** 2021 – 2023
Hanoi University of Science and Technology (HUST)
- GPA: 3.9/4.0, Major GPA: 4.0/4.0.
- Thesis: Evolutionary and Deep Reinforcement Learning Algorithms for Optimizing the Lifetime of Wireless Sensor Networks.
- Advisor: Prof. Thuan Do Phan and Dr. Phi Le Nguyen
- **Engineer in Computer Science** 2016 – 2021
Hanoi University of Science and Technology (HUST)
- GPA: 3.67/4.0, Major GPA: 3.88/4.0.
- Honors: Excellent (≈ 1st class honors).

PUBLICATIONS

- Duy Nguyen, **Ngoc Bui**, Viet-Anh Nguyen. “Feasible Recourse Plan via Diverse Interpolation”. *AIS-TATS*, 2023.
- Duy Nguyen, **Ngoc Bui**, Viet-Anh Nguyen. “Distributionally Robust Recourse Action”. *ICLR*, 2023.
- **Ngoc Bui**, Tam Nguyen, Binh Huynh Thi Thanh, and Trong Vinh Le. “A phenotype-based multi-objective evolutionary algorithm for maximizing lifetime in wireless sensor networks with bounded hop”. *Soft Computing*, 2023.
- **Ngoc Bui**, Duy Nguyen, Viet-Anh Nguyen. “Counterfactual Plans under Distributional Ambiguity”. *ICLR*, 2022.
- Tuan-Duy Hien Nguyen, **Ngoc Bui**, Duy Nguyen, Man-Chung Yue, Viet Anh Nguyen. “Robust Bayesian Recourse”. *UAI*, 2022.
- **Ngoc Bui**, Phi Le Nguyen, Viet Anh Nguyen, Phan Thuan Do. “A Deep Reinforcement Learning-based Adaptive Charging Policy for WRSNs”. *IEEE MASS*. 2022.
- **Ngoc Bui** and Viet-Trung Tran. “A Novel Conditional Random Fields Aided Fuzzy Matching in Vietnamese Address Standardization”. *SoICT*. 2019.

UNDER REVIEW

- **Ngoc Bui**, Hieu Trung Nguyen, Viet Anh Nguyen, and Rex Ying. “Explaining Graph Neural Networks via Structure-aware Interaction Index”. Under review.
- **Ngoc Bui**, Duy Nguyen, Man-Chung Yue, and Viet-Anh Nguyen. “Coverage-Validity-Aware Algorithmic Recourse”. Under review.



EXPERIENCES

- **Research Resident** *August 2021 - July 2023*
Machine Learning group - VinAI Research
 - Focusing on robust & trustworthy ML, studying different paradigms of explanation methods for machine learning models and their robustness.
 - Advisor: Prof. Viet Anh Nguyen
 - Applied Rotation Project: Interactive Tool for 3D Point Cloud Segmentation.
- **Research Assistant** *December 2019 - June 2020*
Data Science Lab - HUST
 - Studying the Vietnamese address standardization problem that recognizes and normalizes free-form addresses into a common standard format.
 - Advisor: Dr. Viet-Trung Tran
- **AI Research Intern** *July 2019 - October 2019*
IBM Vietnam
 - Applying PowerAI Vision to visual inspection problems in the car manufacturing process to detect dirt, and dust defects in the car body after painting.
 - Advisor: Dr. Tam Le Nhan

AWARDS & HONORS

- Honorable Mention in INFORMS Undergraduate Operations Research Prize. *2022*
- Best Thesis Presentation Award. *2021*
- Problem Winner in ASEAN-India Hackathon. *2021*
- Third prize in Vietnam Olympiad in Informatics. *2016*

TEACHING

- Applied Algorithms classes, *HUST* *2019 - 2021*

PROFESSIONAL SERVICES

- Reviewer at AISTATS 2022/2023, FaCCT 2023, UAI 2023, NeuRIPS 2023, ICLR 2024.
- Reviewer at ACM Transactions on Sensor Networks (TOSN).

SKILLS

- Programming languages: Python, C++, Java.
- Tools: git, docker.
- Languages: Vietnamese (native), English (fluent).