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Long P. Hoang

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RESEARCH INTEREST

My research interest includes Optimization, Multi-Task Learning, and Recommender Systems. Specifically, the primary focus of my research can be summarized as follows: "Optimization methods for Multi-Objective Deep Learning Models which improve the performance by utilizing extra-information from numerous related tasks instead of single task learning and application to large-scale problems."

EDUCATION

Bachelor **Hanoi University of Science and Technology (HUST)** **08/2018 – 09/2022**

- Major: Mathematics and Informatics. CPA: 3.11
- Academic advisor: Assist. Prof. Thang N. Tran
- Graduated thesis: Improving Pareto Front Learning via Multi-Sample Hypernetwork. Thesis grade: 10/10

EXPERIENCE

Research Assistant **College of Engineering and Computer Science, VinUniversity** **02/2022 – Present**

- Advisor: Assist. Prof. Dung D. Le
- Develop a new framework for Multi-Objective Recommendation which consider a variety of criteria, including fairness, robustness, novelty, etc. in special scenarios such as cold start, adversarial attack,...
- Proposed a novel method namely HV Indicator Hypernetwork to approximate the entire trade-off curve of conflicting objectives, which adequately solves the real-time control problem of multi-objective systems (accepted to AAAI 2023)
- Worked as an external reviewer under the supervision of the advisor at PAKDD 2023

Research Assistant **School of Applied Mathematics and Informatics, HUST** **06/2021 – Present**

- Advisor: Assist. Prof. Thang N. Tran
- Study Bayesian Optimization methods in the discrete set, and distributed optimization in the context of Multi-Objective
- Proposed and proved the convergence of a new framework for Pareto Multi-Task Learning with Completed Scalarization Functions in the pseudo-convex and quasiconvex assumptions, which is being revised for submission
- Worked on object detection and segmentation. Developed a two-stage framework, which combines U2-Net and Mask-CNN, to increase 1.8-2.5% mAP, mAR for Building Footprint Extraction (accepted to ICISN 2022)
- Developed a nearly 100% accurate Named-Entity Recognition model for Vietnamese customs declaration by using BERT, PhoBERT with transfer learning

Lab Assistant **College of Engineering and Computer Science, VinUniversity** **12/2022 – Present**

- Setup server from scratch for College of Engineering and Computer Science, VinUniversity
- Manage resources and monitor activities of the server

Teaching Assistant **College of Engineering and Computer Science, VinUniversity** **02/2022 – 07/2022**

- Class: Database Concepts and Skills for Big Data, AY 2021-2022
- Supports Assist. Prof. Dung D. Le during the lecture class and holds office hours

PUBLICATIONS

[1] **Long P. Hoang**, Dung D. Le, Tuan T. Tran, Thang N. Tran, Improving Pareto Front Learning via Multi-Sample Hypernetworks, *In Proceedings of the AAAI Conference on Artificial Intelligence*, 2023

[2] Anh T. Ho, Tuan T. Tran, **Long P. Hoang**, Ha H. Le, Thang N. Tran, Multi Deep Learning Model for Building Footprint Extraction from High Resolution Remote Sensing Image, *In Intelligent Systems and Networks*, 2022

ADWARDS & CERTIFICATES

- 3rd Prize (Grooo International company's sponsorship) in Scientific Research Student Conference at Institute level, Hanoi University of Science and Technology, Jul 2022
- Certificate of Completion of Developer Circles Vietnam Innovation Challenge in Data Science, sponsored by Facebook and delivered by CodeSchool

REFERENCES

1. **Assist. Prof. Dung D. Le** (Ph.D), College of Engineering and Computer Science, VinUniversity
   dung.ld@vinuni.edu.vn
2. **Assist. Prof. Thang N. Tran** (Ph.D), School of Applied Mathematics and Informatics, Hanoi University of Science and Technology
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