

# Hoang Phan

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## EDUCATION

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### New York University

Ph.D., Data Science, Advisors: Prof. Qi Lei, Prof. Andrew Gordon Wilson.

New York, USA

Sept. 2023 - Present

### Hanoi University of Science and Technology

B.Sc., Computer Science, Honor program.

Hanoi, Vietnam

Aug. 2018 - Aug. 2022

## EXPERIENCE

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### VinAI Research

Research resident

Hanoi, Vietnam

Aug. 2021 - Feb. 2023

Advisor: Prof. Trung Le

- Main research topics: *Robust machine learning*, *Transfer learning*, *Multi-task learning*.
- Participated in a Smart City project that aims to build a kidnapping and unshielded truck detection system.

### Data Science Laboratory

Undergraduate research student

SoICT-HUST

Sep. 2019 - Aug. 2021

Advisors: Prof. Khoat Than, Prof. Huong Le Thanh, Dr. Linh Ngo Van

- Main research topics: *Probabilistic inference*, *Continual learning*.
- Developed a processing toolkit for the Khmer language (> 30.000 downloads and installations), supporting Asian Language machine translation. Used in Meta Research projects, NAACL Workshop ...

### Cinnamon Inc.

AI research engineer

Hanoi, Vietnam

Jan. 2020 - June. 2021

- Worked on client productions and research topics, mainly focusing on information extraction of domain-specific business documents with the limitation of provided training data.
- Developed an internal usage chatbot, integrated with Slack, in support of the Human Resource department.

## PUBLICATIONS

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- Anh Nguyen, Long Vuong, **Hoang Phan**, Toan Do, Dinh Phung and Trung Le. "Flat Seeking Bayesian Neural Networks". *Advances in Neural Information Processing Systems*, 2023. [pdf]
- **Hoang Phan**, Trung Le, Trung Phung, Anh Bui, Nhat Ho and Dinh Phung. "Global-Local Regularization Via Distributional Robustness". In *International Conference on Artificial Intelligence and Statistics*, 2023. [pdf]
- **Hoang Phan**, Ngoc Tran, Trung Le, Toan Tran, Nhat Ho and Dinh Phung. "Stochastic multiple target sampling gradient descent". In *Advances in Neural Information Processing Systems*, 2022. [pdf]
- **Hoang Phan**, Anh Phan, Son Nguyen, Linh Ngo Van and Khoat Than. "Reducing catastrophic forgetting in neural networks via Gaussian mixture approximation". In *Advances in Knowledge Discovery and Data Mining. PAKDD. Lecture Notes in Computer Science*. Springer, 2022. [pdf]
- **Hoang Phan**, Long Nguyen, Long Nguyen, and Khanh Doan. "Matching the statements: A simple and accurate model for key point analysis". In *Proceedings of the 8th Workshop on Argument Mining*. Association for Computational Linguistics, 2021. [pdf]
- Tam Nguyen, Quang Pham, Linh Doan, Hoang Trinh, Anh Nguyen and **Hoang Phan**. "Contrastive Learning for Natural Language-Based Vehicle Retrieval". In *Proceedings of the IEEE/CVF Conference on Computer Vision and Pattern Recognition Workshops*, 2021. [pdf]

## PREPRINTS

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- **Hoang Phan**, Lam Tran, Ngoc Tran, Nhat Ho, Dinh Phung and Trung Le. “Improving Multi-task Learning via Seeking Task-based Flat Regions”. Under review. [pdf]
- Ngoc Tran, Lam Tran, **Hoang Phan**, Anh Bui, Tung Pham, Toan Tran, Dinh Phung and Trung Le. “Robust Contrastive Learning With Theory Guarantee”. Under review.
- Ngoc Tran, Son Duong, **Hoang Phan**, Tung Pham, Dinh Phung and Trung Le. “Sharpness & Shift-Aware Self-Supervised Learning”. Under review. [pdf]
- Quyen Tran, **Hoang Phan**, Khoat Than, Dinh Phung and Trung Le. “Continual Learning with Optimal Transport based Mixture Model”. Under review. [pdf]
- Quang Pham, **Hoang Phan**, Hoang Trinh, Anh Nguyen and Hoai Nguyen. “S-NLP at ICDAR 2021: Multimodal Emotion Recognition on Comics scenes”. Submitted to *International Conference on Document Analysis and Recognition Workshops*. [pdf]

## NATIONAL/INTERNATIONAL PRIZE

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<b>National Olympiad for Students</b> Vietnam Mathematical Society (VMS) Olympiad for universities and high school students <ul style="list-style-type: none"><li>• Gold medal (2018), Silver medal (2017).</li></ul>	2017 - 2018
<b>Vietnam Mathematics Olympiad (VMO)</b> The annual national mathematics competition for high school students <ul style="list-style-type: none"><li>• IMO team selection test contestant.</li><li>• Second prize (2018), Third prize (2017).</li></ul>	2017 - 2018
<b>International Tournament of Towns (ITOT)</b> International mathematical Olympiad for school students <ul style="list-style-type: none"><li>• Bronze medal (2017).</li></ul>	2017
<b>Vietnam Institute for Advanced Study in Mathematics (VIASM) Scholarship</b> Scholarship of the National Program for the Development of Mathematics	2016 - 2018
<b>Vallet Scholarship</b> Prof. Odon Vallet’s scholarships for outstanding Vietnamese students	2017 - 2018

## ACHIEVEMENTS

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<b>ArgMining: Key Point Analysis Shared Task, EMNLP</b> Presented the 4 <sup>th</sup> solution in the workshop, hosted by IBM Research AI team.	2021
<b>AI City Challenge: Natural Language-Based Vehicle Retrieval, CVPR</b> Got the 4 <sup>th</sup> place with a Siamese model capable of extracting visual concepts from natural language.	2021
<b>Multimodal Emotion Recognition on Comics scenes, ICDAR</b> Won the first prize with a late fusion model, combined the processing of multiple input modalities.	2021
<b>Reliable Intelligence Identification on Vietnamese SNSs, VLSP</b> Achieved a competitive performance (ranked 4 <sup>th</sup> ) in the VLSP shared task.	2020
<b>Credit Scoring Challenge, Kalapa. Jsc</b> Team ranked 1/146 with 800 contestants in constructing a banking credit scoring system.	2020
<b>University of Liverpool - Ion Switching, Kaggle</b> Bronze medalist (solo) in the University of Liverpool’s Institute of Ageing and Chronic Disease competition.	2020
<b>Practical deep learning, Vietnam Institute for Advanced Study in Mathematics</b> Developed a deep learning-based Vietnamese spell corrector and ranked 1/50 in the final-project defense.	2019

## PROFESSIONAL SERVICES

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Reviewer at ICCV 2023, NeurIPS 2023, ICLR 2024.