

SON VAN NGUYEN

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EDUCATION

University of Texas at Austin

Ph.D. in Computer Science

Advisors: Professor Qiang Liu, Professor Nhat Ho

Austin, USA

Aug 2022 - Present

Ha Noi University of Science and Technology (HUST)

Bachelor of Information Technology, Program of Talented Engineers

Thesis title: "[An effective Bayesian approach for discovering hidden semantics from data streams](#)"

CPA: 3.50/4.00, Major CPA: 3.58/4.00 (rank 2/21 in the talented class), Thesis: 4.00/4.00 (Best Thesis Award)

Ha Noi, Viet Nam

Aug 2014 - Jun 2019

Phan Boi Chau High School for the Gifted Students, Specialized Math Class

Nghe An, Viet Nam

Aug 2011 - Jun 2014

RESEARCH INTEREST

My research currently focuses on methods at the intersection of probabilistic modeling and deep learning, from which I aim to combine the complementary advantages of these two fields into modeling, inference, and learning. I am particularly excited about efficient and scalable probabilistic inference methods applied in complex settings of several domains such as Bayesian deep learning, deep generative models, hierarchical Bayesian models, and large-scale online/continual learning.

EXPERIENCES

VinAI Research (www.vinai.io)

AI Research Resident

Ha Noi, Viet Nam

Jul 2020-present

- Main research topics: Bayesian Deep Learning, Deep Generative Models
- Advisor: Dr. Nhat Ho (Assistant Professor at UT, Austin)
- Knowledge gained: Advances in Bayesian Deep Learning (gradient-based MCMC, Variational Inference with dependence structure, principles of uncertainty estimation, applications in continual/active learning); Deep Generative Models (VAEs, GANs, Normalizing Flows, applications of Optimal Transport)

Applied Rotation Program

Sep 2021-Dec 2021

- Participate in Smart City project involving computer vision tasks such as face detection, face re-identification.

Data Science Laboratory (ds.soict.hust.edu.vn)

Research Assistant

Ha Noi, Viet Nam

Aug 2018 - Jul 2020

- Main research topics: Probabilistic Graphical Model, Bayesian inference
- Advisor: Dr. Khoat Than (Associate Professor at HUST)
- Knowledge gained: Foundations of Machine Learning, Deep Learning and Optimization; Bayesian inference (MCMC, scalable variational approximation, applications in hierarchical Bayesian models and online learning); Topic models (Latent Dirichlet Allocation)

Teaching Assistant

Jan 2020 - Jun 2020

- Machine Learning and Data Mining course

- Projects: analyze the consumer behavior in telecommunication of millions of users, develop recommendation algorithms for promotions

SUBMISSIONS

1. **Son Nguyen**, Khai Nguyen, Nhat Ho, "[Amortized Bayesian Neural Networks](#)", *To be submitted 2022*

PUBLICATIONS

1. Ha Nguyen*, Hoang Pham*, **Son Nguyen***, Linh Ngo, Khoat Than, "[Adaptive Infinite Dropout for Noisy and Sparse Data Streams](#)", *Machine Learning journal*, 2022
2. **Son Nguyen**, Duong Nguyen, Khai Nguyen, Khoat Than, Hung Bui*, Nhat Ho*, "[Structured Dropout Variational Inference for Bayesian Neural Networks](#)", *Advances in Neural Information Processing Systems (NeurIPS) 2021*
3. Khai Nguyen, **Son Nguyen**, Nhat Ho, Tung Pham, Hung Bui, "[Improving Relational Regularized Autoencoders with Spherical Sliced Fused Gromov Wasserstein](#)", *International Conference on Learning Representations (ICLR) 2021*
4. **Son Nguyen**, Tung Nguyen, Linh Ngo, Khoat Than, "[Infinite Dropout for training Bayesian models from data streams](#)", *IEEE International Conference on Big Data (Big Data) 2019*

TECHNICAL TALKS

- | | |
|---|-----------|
| 1. Recent Advances in Deep Learning Uncertainty, <i>Data Science Lab - HUST</i> | Nov, 2021 |
| 2. Structured Dropout Variational Inference for Bayesian Neural Networks, <i>VinAI NeurIPS Workshop</i> | Nov, 2021 |
| 3. Uncertainty in Deep Learning and the case for Bayesian Deep Learning, <i>VinAI Research</i> , slide here | Jun, 2021 |
| 4. Optimal Transport for Generative Modelling, <i>VinAI Research</i> , slide here | Oct, 2020 |

PROFESSIONAL SERVICES

Thesis mentor for undergraduate students

- Ha Nguyen, Hoang Pham: Project "[Online Bayesian inference methods for noisy and sparse data streams](#)"
- Hoang Phan, Anh Phan: Project "[Reducing catastrophic forgetting in neural networks via Gaussian mixture approximation](#)"

AWARDS AND RECOGNITIONS

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| 1. Vingroup Innovation Foundation (VINIF) Research Scholarship | 2019, 2020 |
| 2. Best Thesis Award, Best Presentation Award for undergraduate student | 2019 |
| 3. Third Prize in the Scientific Research Student Conference, HUST | 2019 |
| 4. Scholarship for students with excellent academic records, HUST | 2015, 2017 |
| 5. Vietnam Mathematical Olympiad for university students (VMS)
(First Prize in Calculus, Second Prize in Algebra) | 2015, 2016 |
| 6. Scholarship of the National Program for the Development of Mathematics, Vietnam Institute for Advanced Study in Mathematics (VIASM) | 2014, 2015 |
| 7. Second prize in Vietnam Mathematical Olympiad (VMO) for high school students | 2014 |

EDUCATIONAL CONTRIBUTIONS

1. **Book:** [Olympic mathematical topics for gifted students](#), 2 volumes, *Vietnam National University Press, Ha Noi*.
Nguyen Dinh Thanh Cong, Nguyen Van Huong, Nguyen Duy Hung, Tran Tri Kien, **Nguyen Van Son**, Le Nhat, Tran Bao Trung
Jul 2017
2. **Book:** [Topics on combinatorics and complex numbers](#), *Vietnam National University Press, Ha Noi*. Tran Tri Kien, **Nguyen Van Son**, Le Nhat
Jul 2016
3. Member of GSTT Group (a non-profit educational organization), lead refresher courses and consolidate the knowledge for high school students
Oct 2014 - Oct 2015

SPECIALIZED AND LANGUAGE SKILLS

Programming skills:

- Proficient: Python (PyTorch, numpy, pandas, scikit-learn)
- Familiar: C, JAVA, LATEX

Languages:

- Vietnamese: Native
- English: IELTS 6.5 overall

REFERENCES

Dr. **Nhat Ho**

Assistant Professor, Department of Statistics and Data Science
The University of Texas at Austin, USA
Email: minhnhat@utexas.edu

Dr. **Hung Bui**

Founding Director of VinAI Research, Vietnam
Email: v.hungbh1@vinai.io

Dr. **Khoat Than**

Associate Professor, Head of Data Science Lab
Ha Noi University of Science and Technology, Vietnam
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Dr. **Dinh Phung**

Professor, Department of Data Science and AI
Monash University, Australia
Email: dinh.phung@monash.edu