

# SON VAN NGUYEN

VinAI Research, Ha Noi, Viet Nam.

Homepage: [sonpeter.github.io](https://sonpeter.github.io)

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## RESEARCH INTEREST

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My core research focus is on developing interpretable and scalable algorithms for machine learning models. I am particularly excited about practical and flexible approximate inference methods applied in complex settings such as probabilistic deep learning, hierarchical latent models, large-scale online learning.

## EDUCATION

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**Ha Noi University of Science and Technology (HUST)** Ha Noi, Viet Nam

- Master of Data Science, *Master of Research degree* Oct 2019 - Apr 2021  
Thesis title: "[Improving Bayesian inference in deep neural networks with Variational Structured Dropout](#)"  
CPA: 3.84/4.0
- Bachelor of Information Technology, *Program of Talented Engineers* Aug 2014 - Jun 2019  
Thesis title: "[An effective Bayesian approach for discovering hidden semantics from data streams](#)"  
CPA: 3.50/4.0 (rank 2/21 in the talented class)

**Phan Boi Chau High School for the Gifted Students** *Specialized Math Class* Nghe An, Viet Nam  
Aug 2011 - Jun 2014

## EXPERIMENTS

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**VinAI Research** ([www.vinai.io](http://www.vinai.io)) Ha Noi, Viet Nam  
*AI Research Resident* Aug 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), Deep Generative Models (VAEs, GANs, Normalizing Flows, applications of Optimal Transport)

**Data Science Laboratory (HUST)** ([ds.soict.hust.edu.vn](http://ds.soict.hust.edu.vn)) Ha Noi, Viet Nam  
*Research Assistant* Feb 2019 - Aug 2020

- Main research topics: Probabilistic Graphical Model, Online and Continual Learning
- Advisor: Dr Khoat Than (Associate Professor at HUST)
- Knowledge gained: Fundamental Machine Learning and Deep Learning, Topic models, Bayesian inference, Variational Approximation

*Teaching Assistant* Feb 2020 - Jun 2020

- Machine Learning and Data Mining course

**Viettel Network Technology R&D Center** Ha Noi, Viet Nam  
*Department of Data Science* Jun 2018 - Jun 2019

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

## PUBLICATIONS

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1. **Son Nguyen**, Duong Nguyen, Khai Nguyen, Nhat Ho, Khoat Than, Hung Bui, "[Structured Dropout Variational Inference for Bayesian Neural Networks](#)," *Under review*
2. Khai Nguyen, **Son Nguyen**, Nhat Ho, Tung Pham, Hung Bui, "[Distributional Sliced-Wasserstein and Applications to Generative Modeling](#)," *International Conference on Learning Representations (ICLR) 2021*
3. Ha Nguyen, Hoang Pham, **Son Nguyen**, Linh Ngo, Khoat Than, "[Adaptive Infinite Dropout for Noisy and Sparse Data Streams](#)," *Under review Machine Learning journal*
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*

## AWARDS AND RECOGNITIONS

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|---|------------|
| 1. Scholarship of the Domestic Master Program of Vingroup Innovation Foundation, VINIF (\$5,000)  | 2019       |
| 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 good academic records, HUST  | 2015, 2017 |
| 5. Vietnam Mathematics Olympiad for university students (VMS)<br>(First Prize in Calculus, Second Prize in Algebra)   | 2015, 2016 |
| 6. Second prize in Vietnam Mathematical Olympiad (VMO) for high school students   | 2014       |
| 7. Scholarship (for high school students) of the National Program for the Development of Mathematics of Vietnam<br>Institute for Advanced Study in Mathematics, VIASM | 2013, 2014 |

## EDUCATIONAL ACTIVITIES

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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 2016
2. Member of GSTT Group (a nonprofit educational organization), lead refresher courses and consolidate the knowl-  
edge for high school students Oct 2014 - Oct 2015

## SPECIALIZED SKILLS

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### Programming skills:

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