SON VAN NGUYEN

VinAI Research, Ha Noi, Viet Nam.
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RESEARCH INTEREST

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

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

- Master of Data Science, *Master of Research degree* October 2019 - April 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* August 2014 - June 2019
  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
August 2011 - June 2014

EXPERIMENTS

VinAI Research, *www.vinai.io* Ha Noi, Viet Nam
AI Research Resident August 2020-present

- Main research topics: Bayesian Deep Learning and 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* Ha Noi, Viet Nam
Research Assistant February 2019 - August 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 February 2020 - June 2020

- Machine Learning and Data Mining course

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

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

PUBLICATIONS

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

1. Scholarship of the Domestic Master Program of Vingroup Innovation Foundation, VINIF 2019

2. Best Undergraduate Thesis Award 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) 2015, 2016
(First Prize in Calculus, Second Prize in Algebra)

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 Institute for Advanced Study in Mathematics, VIASM 2013, 2014

EDUCATIONAL ACTIVITIES

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 July 2016

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

SPECIALIZED SKILLS

Programming skills:

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