Trang H. Tran

✉ htt27@cornell.edu · https://htt-trangtran.github.io

(Updated January 15, 2022)

FIELDS OF INTEREST

Optimization, and Machine Learning/Deep Learning

EDUCATION

2020 – Present **School of Operations Research and Information Engineering, Cornell University**
Doctor of Philosophy, Major: Operations Research
PhD advisor: Prof. Katya Scheinberg
PhD co-advisor: Dr. Lam M. Nguyen

2019 – 2020 **Institute of Mathematics, Vietnam Academy of Science and Technology**
Graduate Study in Applied Mathematics (Dropped)

2015 – 2019 **Hanoi National University of Education**
Honor Class, Faculty of Mathematics
Degree of Bachelor, Classification: Excellent

PUBLICATIONS

2021 **SMG: A Shuffling Gradient-Based Method with Momentum**
Trang H. Tran, Lam M. Nguyen, and Quoc Tran-Dinh
International Conference on Machine Learning (ICML 2021) (21.47% acceptance rate)

PROFESSIONAL ACTIVITIES

2020 – Present **Program Committee – Reviewer (peer-reviewed conferences)**
International Conference on Machine Learning (ICML 2020 - 2022)
Conference on Neural Information Processing Systems (NeurIPS 2021)
International Conference on Learning Representations (ICLR 2021 - 2022)
Conference on Artificial Intelligence (AAAI 2022)
International Conference on Artificial Intelligence and Statistics (AISTATS 2021 - 2022)
Conference on Uncertainty in Artificial Intelligence (UAI 2022)

2021 **Reviewer (peer-reviewed journal)**
Machine Learning
IEEE Transactions on Signal Processing

2021 **Program Committee – Reviewer (workshops)**
Optimization for Machine Learning: Beyond Worst-case Complexity (OPT 2021 – NeurIPS 2021 Workshop)
New Frontiers in Federated Learning: Privacy, Fairness, Robustness, Personalization and Data Ownership (NFFL 2021 – NeurIPS 2021 Workshop)

2021 **Session Chair / Organizer**
INFORMS Annual Meeting 2021 – "Recent Advances in Stochastic Gradient Algorithms"

RESEARCH EXPERIENCES

2021 – Present Stochastic Zeroth-order/First-order Oracles in Optimization

Working under the supervision of Prof. Katya Scheinberg

– Analyze the stochastic methods for continuous optimization problems.

– Investigate some fundamental properties of various probabilistic zeroth-order/first-order oracles with the aim to utilize that information to design effective optimization methods.

2020 – Present New Perspective on the Global Convergence of Finite-Sum Optimization

Working under the supervision of Dr. Lam M. Nguyen

– Present an alternative formulation for the finite-sum nonconvex optimization problems.

– Propose a novel framework that guarantees global convergence and exploits the structure of machine learning problems where the loss functions are convex.

Under review as a conference paper at ICLR 2022

2020 – 2021 SMG: A Shuffling Gradient-Based Method with Momentum

Working under the supervision of Dr. Lam M. Nguyen

– Develop a new shuffling gradient algorithm with momentum for solving the finite-sum minimization problems.

– Establish the state-of-the-art convergence rate for our method under standard assumptions using different learning rates and shuffling strategies.

Published as a conference paper at ICML 2021

INDUSTRY EXPERIENCE

Summer 2022 AI Research Intern (upcoming)

IBM Research, Thomas J. Watson Research Center, Yorktown Heights, NY

Supervisor: Dr. Lam M. Nguyen

HONORS & AWARDS

2021 Outstanding Reviewer

International Conference on Learning Representations (ICLR 2021)

Reviewer Award (Top 10%)

2020 ORIE Field Fellowship

Eleanor and Howard Morgan PhD'68 Graduate Fellowship, Fall 2020

2019 Young Talent Scholarship Programme 2019

From the Vingroup Innovation Foundation (VINIF) for outstanding students who are pursuing the domestic postgraduate study programmes

2016 – 2018 Students Scholarship in National Program

for the Development of Mathematics until 2020

2016 First Prize on Algebra

In Vietnam Mathematics Competition for University Students (nationwide award)

INVITED TALKS

10 – 2021 Shuffling Gradient-Based Methods

INFORMS Annual Meeting 2021, Anaheim, CA

OTHER EXPERIENCES

Research Assistant

Fall 2021 Cornell University

Supervisor: Prof. Katya Scheinberg

Spring 2021 — Teaching Assistant
Cornell University
ORIE 3510 Introduction to Engineering Stochastic Processes

SKILLS

Technical — Python, MATLAB, PyTorch, TensorFlow, Keras, Gurobi.
Language — Vietnamese (native), English (proficient)

REFERENCES

Katya Scheinberg, Ph.D.

Professor,
School of Operations Research and Information Engineering, Cornell University
225 Frank H.T. Rhodes Hall, Ithaca, NY 14850, USA
✉ katyas@cornell.edu ☎ +1 (607) 255-1525
https://www.orie.cornell.edu/faculty-directory/katya-scheinberg

Lam M. Nguyen, Ph.D.

Research Staff Member,
IBM Research, Thomas J. Watson Research Center
1101 Kitchawan Rd, Yorktown Heights, NY 10598, USA
✉ lamnguyen.mltd@ibm.com ☎ +1 (469) 834-7021
https://researcher.watson.ibm.com/researcher/view.php?person=ibm-lamnguyen.mltd

Marten van Dijk, Ph.D.

Group Leader, Scientific Staff Member,
Computer Security, Centrum Wiskunde & Informatica
L312 Science Park 123, 1098 XG Amsterdam, NETHERLANDS
✉ marten.van.dijk@cwi.nl ☎ +31 20 592 4066
https://www.cwi.nl/people/marten-van-dijk

Quoc Tran-Dinh, Ph.D.

Associate Professor,
Department of Statistics and Operations Research, The University of North Carolina at Chapel Hill
333 Hanes Hall, Chapel Hill, NC 27599, USA
✉ quoctd@email.unc.edu ☎ +1 (919) 843-6023
https://quoctd.web.unc.edu