# Trang H. Tran

# EDUCATION

2020 – 2024 Ph.D., Cornell University

School of Operations Research and Information Engineering.

Major: Mathematical Programming.

Advisor: Dr. Katya Scheinberg, Co-advisor: Dr. Lam M. Nguyen.

2015 – 2019 B.S., Hanoi National University of Education

Major: Mathematics and Education.

#### RESEARCH EXPERIENCE

2025 – Present Postdoctoral Research Associate

Lehigh University, Bethlehem, PA Supervisor: Dr. Luis Nunes Vicente

Summer 2024 Siegel PiTech PhD Impact Fellow

ADAPT Community Network, New York City, NY

Supervisor: Ronak Parikh

Summer 2023 Research Scientist Intern (Artificial Intelligence)

 $\operatorname{IBM},$  Thomas J. Watson Research Center, Yorktown Heights, NY

Supervisors: Dr. Lam M. Nguyen, Dr. Kyongmin Yeo, Dr. Nam H. Nguyen

Summer 2022 Research Scientist Intern (Artificial Intelligence)

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

Supervisor: Dr. Lam M. Nguyen

#### PAPERS

# Peer-reviewed Conference Papers

2024 Shuffling Gradient-Based Methods for Nonconvex-Concave Minimax Optimization

Quoc Tran-Dinh, Trang H. Tran, Lam M. Nguyen

Conference on Neural Information Processing Systems (NeurIPS) (25.8% acceptance rate)

2024 Improving Time Series Encoding with Noise-Aware Self-Supervised Learning and an Efficient

Encoder

Anh Duy Nguyen, **Trang H. Tran**, Hieu H. Pham, Phi Le Nguyen, Lam M. Nguyen IEEE International Conference on Data Mining (**ICDM**) (19.5% acceptance rate)

2023 On the Convergence to a Global Solution of Shuffling-Type Gradient Algorithms

Lam M. Nguyen\*, Trang H. Tran\*

Conference on Neural Information Processing Systems (NeurIPS) (26.1% acceptance rate)

2022 Nesterov Accelerated Shuffling Gradient Method for Convex Optimization.

Trang H. Tran, Katya Scheinberg, Lam M. Nguyen

International Conference on Machine Learning (ICML) (21.9% acceptance rate)

2021 SMG: A Shuffling Gradient-Based Method with Momentum

Trang H. Tran, Lam M. Nguyen, Quoc Tran-Dinh

International Conference on Machine Learning (ICML) (21.47% acceptance rate)

#### Peer-reviewed Journal Papers

2024 Shuffling Momentum Gradient Algorithm for Convex Optimization.

Trang H. Tran, Quoc Tran-Dinh, Lam M. Nguyen

Vietnam Journal of Mathematics  $(\mathbf{VJOM})$ 

Special issue dedicated to Dr. Tamás Terlaky on the occasion of his 70th birthday, 2024

2024 Stochastic ISTA/FISTA Adaptive Step Search Algorithms for Convex Composite Optimization

Lam M. Nguyen, Katya Scheinberg, **Trang H. Tran** †

Journal of Optimization Theory and Applications (JOTA)

## Peer-reviewed Workshop Papers

#### 2023 Stochastic FISTA Step Search Algorithm for Convex Optimization

Trang H. Tran, Lam M. Nguyen, Katya Scheinberg

Conference on Neural Information Processing Systems (NeurIPS),

Workshop on Optimization for Machine Learning (OPT)

## Papers Under Review

# 2023 A Univariate Pretrain-Finetune Approach for Time Series Using Supervised Contrastive Learning

Trang H. Tran, Lam M. Nguyen, Kyongmin Yeo, Nam Nguyen, Roman Vaculin

#### 2023 An End-to-End Time Series Model for Simultaneous Imputation and Forecast

**Trang H. Tran**, Lam M. Nguyen, Kyongmin Yeo, Nam Nguyen, Dzung Phan, Roman Vaculin, Jayant Kalagnanam

#### 2022 New Perspective on the Global Convergence of Finite-Sum Optimization

Lam M. Nguyen\*, Trang H. Tran\*, Marten van Dijk

## Technical Reports

## 2022 Finding Optimal Policy for Queueing Models: New Parameterization

Trang H. Tran, Lam M. Nguyen, Katya Scheinberg

\* denotes equal contributions, † denotes alphabetical order

## PROFESSIONAL ACTIVITIES

#### Member

# 2022 - Present Editorial Board, Machine Learning Journal

# Organizer

#### 2023 Workshop Organizer

When Machine Learning meets Dynamical Systems: Theory and Applications.

Lam M. Nguyen, Trang H. Tran, Wang Zhang, Subhro Das and Tsui-Wei Weng

Workshop at the Conference on Artificial Intelligence (AAAI)

#### 2021 – Present Session Chair

INFORMS Annual Meeting 2025 - "Iterative Optimization Approaches"

INFORMS Annual Meeting 2023 – "First-Order Methods for Machine Learning"

INFORMS Annual Meeting 2022 – "Optimization for Machine Learning"

INFORMS Annual Meeting 2021 – "Recent Advances in Stochastic Gradient Algorithms"

#### Reviewer

# 2020 - Present Program Committee - Reviewer (peer-reviewed conferences)

International Conference on Machine Learning (ICML 2020 - 2024)

Conference on Neural Information Processing Systems (NeurIPS 2021 - 2024) International Conference on Learning Representations (ICLR 2021 - 2024)

Conference on Artificial Intelligence (AAAI 2022, 2025)

International Conference on Artificial Intelligence and Statistics (AISTATS 2021 - 2025)

Conference on Uncertainty in Artificial Intelligence (UAI 2022 - 2023) Conference on Computer Vision and Pattern Recognition (CVPR 2023)

## 2021 – Present Reviewer (peer-reviewed journals)

Journal of Machine Learning Research (2022 – Present)

Journal of Optimization Theory and Applications (2022 – Present)

Machine Learning (2021 – Present) Neural Networks (2022 – 2023)

IEEE Transactions on Neural Networks and Learning Systems (2022)

IEEE Transactions on Signal Processing (2021)

#### 2021 Program Committee – Reviewer (peer-reviewed 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)

# PATENTS APPLICATIONS

2024 A Multivariate Time Series Model Which Simultaneously Learns The Spatial And Temporal Relation.

Filed on January 5th, 2024.

Lam M. Nguyen, Trang H. Tran.

2023 Time Series Forecasting Using Multivariate Time Series Data With Missing Values.

Filed on February 1st, 2023.

Lam M. Nguyen, **Trang H. Tran**, Kyongmin Yeo, Nam Nguyen, Dzung Phan, Roman Vaculin, Jayant Kalagnanam.

2022 Training A Neural Network Using an Accelerated Gradient with Shuffling.

Filed on July 14th, 2022.

Lam M. Nguyen, Trang H. Tran.

## HONORS & AWARDS

2024 Cornell Tech PhD Impact Fellowship

Siegel Family Endowment PiTech PhD Impact Fellowship, Summer 2024

2023 NeurIPS 2023 Scholar Award

Conference on Neural Information Processing Systems (NeurIPS 2023) (Travel Grant)

2022 UAI 2022 Top Reviewer

Conference on Uncertainty in Artificial Intelligence (UAI 2022)

2022 ICML 2022 Participation Grant

International Conference on Machine Learning (ICML 2022)

2021 ICLR 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)

## TALKS

07/2024 Stochastic ISTA/FISTA Adaptive Step Search Algorithms for Convex Composite Optimization.

International Symposium on Mathematical Programming (ISMP 2024), Montreal, Canada

12/2023 On the Convergence to a Global Solution of Shuffling-Type Gradient Algorithms. Conference on Neural Information Processing Systems (NeurIPS 2023), New Orleans, LA

10/2023 Stochastic Optimization Methods with Momentum.

INFORMS Annual Meeting 2023, Phoenix, AZ

01/2023 Shuffling Gradient Methods for Finite-sum Optimization.

Institute of Mathematics, Vietnam Academy of Science and Technology, Hanoi, Vietnam

10/2022 Nesterov Accelerated Shuffling Gradient Method.

INFORMS Annual Meeting 2022, Indianapolis, IN

07/2022	Nesterov Accelerated Shuffling Gradient Method for Convex Optimization. International Conference on Machine Learning (ICML 2022), Baltimore, MD
10/2021	Shuffling Gradient-Based Methods INFORMS Annual Meeting 2021, Anaheim, CA
07/2021	SMG: A Shuffling Gradient-Based Method with Momentum International Conference on Machine Learning (ICML 2021), virtual conference

## TEACHING EXPERIENCES

# Instructor of Record - Lehigh University

Fall 2025 ISE 364/464 Introduction to Machine Learning

# Teaching Assistant - Cornell University

Fall 2024 ORIE 6730 Mathematics of Deep Learning

Spring 2024 ORIE 3310 Optimization II

Fall 2022 MATH 2940 Linear Algebra for Engineers

Spring 2021 ORIE 3510 Introduction to Engineering Stochastic Processes

## Mentorship

#### 2024 – Present Duc Toan Nguyen

Undergraduate student, Mathematics and Computer Science, Texas Christian University. (co-advise with Dr. Lam M. Nguyen)

## 2022 – 2023 Anh Duy Nguyen

Ph.D. student, Department of Electrical and Computer Engineering, University of Illinois at Urbana-Champaign. (co-advise with Dr. Lam M. Nguyen)

## 2022 - 2023 Angelos Assos

Undergraduate student, Computer Science and Mathematics, Massachusetts Institute of Technology. (co-advise with Dr. Lam M. Nguyen and Prof. Luca Daniel)

## REFERENCES

## Katya Scheinberg, Ph.D.

Coca-Cola Foundation Chair and Professor, H. Milton Stewart School of Industrial and Systems Engineering, Georgia Institute of Technology

312 Groseclose Building, 765 Ferst Dr, Atlanta, GA 30332, USA

⊠ katya.scheinberg@isye.gatech.edu https://sites.gatech.edu/katya-scheinberg

## Lam M. Nguyen, Ph.D.

# Staff Research Scientist, IBM Research, Thomas J. Watson Research Center

1101 Kitchawan Rd, Yorktown Heights, NY 10598, USA

 $\begin{tabular}{ll} $\boxtimes$ lamnguyen.mltd@ibm.com & https://researcher.watson.ibm.com/researcher/view.php?person=ibm-lamnguyen.mltd & https://researcher/view.php?person=ibm-lamnguyen.mltd & https://researcher/view.php.person=ibm-lamnguyen.mltd & https://researcher/view.php.person=ibm-lamnguyen.mltd & https://researcher/view.php.$ 

# 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 https://quoctd.web.unc.edu

#### 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 https://www.cwi.nl/people/marten-van-dijk