NGUYEN TA DUY

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EDUCATION

Ph.D. Student in Computer Science 09/2021 – 05/2026 (Expected)
Boston University, advised by Prof. Alina Ene. GPA: 3.95/4.

Master of Science in Computer Science 08/2017 – 04/2019
National University of Singapore, supervised by Prof. Yair Zick. GPA: 4.75/5.

Diplôme de l'École Polytechnique in Mathematics and Computer Science 01/2015 – 04/2019
École Polytechnique, France. GPA: 3.65/4.

Bachelor of Computing in Computer Science 08/2013 – 06/2018
National University of Singapore; Double Degree with École Polytechnique. GPA: 4.53/5; graduated with Highest Distinction.

RESEARCH INTEREST

Optimization: Convex and non-convex optimization and applications in Machine Learning.
Theoretical Computer Science: Differential Privacy, Streaming algorithms, Algorithms for graphs.

EXPERIENCE

Google Research, Student Researcher Intern. 08/2025 – 01/2026
Project: Space and Time Efficient Softmax for Recommender Systems.

Meta, Machine Learning Intern. 05/2025 – 08/2025
Project: Impression Rate Prediction and Allocation Algorithms for Pricing Optimization.

Microsoft, Research Intern (Applied Sciences Group). 06/2024 – 08/2024
Project: Efficient Rank Allocation under Memory Constraints for Low-Rank Adaptation in Fine-Tuning Language Models.

Simons Institute for the Theory of Computing, Visiting Student. 08/2023 – 12/2023
Attended Research program "Data Structures and Optimization for Fast Algorithms."

National University of Singapore, Research Assistant. 04/2019 – 08/2021
Studied interpretability of machine learning models and robustness of fair machine learning.
Supervisor: Reza Shokri.

École Polytechnique & JDA Software Montreal, Research Intern. 04/2017 – 08/2017
Studied the vehicle routing problem from a data analytic approach.
Supervisor: Louis-Martin Rousseau.

PUBLICATIONS

* = equal contribution, $\alpha\beta$ = in alphabetical order.

Conference papers

12. ($\alpha\beta$) Improved ℓ_p-Regression via Iteratively Reweighted Least Squares. Alina Ene, Ta Duy Nguyen, Adrian Vladu. *International Conference on Learning Representations*, **ICLR 2026**.

11. ($\alpha\beta$) Quasi-Self-Concordant Optimization with ℓ_∞ Lewis Weights. Alina Ene, Ta Duy Nguyen, Adrian Vladu. *Advances in Neural Information Processing Systems*, **NeurIPS 2025**.

10. ($\alpha\beta$) Solving Linear Programs with Differential Privacy. Alina Ene, Huy Le Nguyen, Ta Duy Nguyen, Adrian Vladu. *International Conference on Randomization and Computation*, **RANDOM 2025**.

9. Multiplicative Weights Update, Area Convexity and Random Coordinate Descent for Densest Subgraph Problems. Ta Duy Nguyen, Alina Ene. *International Conference on Machine Learning*, **ICML 2024** (*Oral Presentation*).

8. On the Generalization Error of Stochastic Mirror Descent for Quadratically-Bounded Losses: an Improved Analysis. Ta Duy Nguyen, Alina Ene, Huy Le Nguyen. *Advances in Neural Information Processing Systems*, **NeurIPS 2023**.

7. Improved Convergence in High Probability of Clipped Gradient Methods with Heavy Tailed Noise. Ta Duy Nguyen*, Thien Hang Nguyen*, Alina Ene, Huy Le Nguyen. *Advances in Neural Information Processing Systems*, **NeurIPS 2023** (*Spotlight*).

6. High Probability Convergence of Stochastic Gradient Methods. Zijian Liu*, Ta Duy Nguyen*, Thien Hang Nguyen*, Alina Ene, Huy Le Nguyen. *International Conference on Machine Learning*, ICML 2023.

5. On the Convergence of AdaGrad on $\mathbb{R}^d$: Beyond Convexity, Non-Asymptotic Rate and Acceleration. Zijian Liu*, Ta Duy Nguyen*, Alina Ene, Huy Le Nguyen. *International Conference on Learning Representations*, **ICLR 2023**.

4. Adaptive Accelerated (Extra-)Gradient Methods with Variance Reduction. Zijian Liu*, Ta Duy Nguyen*, Alina Ene, Huy Le Nguyen. *International Conference on Machine Learning*, **ICML 2022**.

3. ($\alpha\beta$) Threshold Task Games: Theory, Platform and Experiments. Kobi Gal, Ta Duy Nguyen, Quang Nhat Tran, Yair Zick. *International Conference on Autonomous Agents and Multi-Agent Systems*, **AAMAS 2020**.

2. ($\alpha\beta$) Resource Based Cooperative Games: Optimization, Fairness and Stability. Ta Duy Nguyen, Yair Zick. *Symposium on Algorithmic Game Theory*, **SAGT 2018** (Short paper).

1. ($\alpha\beta$) Fast Genetic Algorithms. Benjamin Doerr, Huu Phuoc Le, Régis Makhmara, Ta Duy Nguyen. *Genetic and Evolutionary Computation Conference*, **GECCO 2017**.

Manuscripts

3. ($\alpha\beta$) Adaptive Power Iteration Method for Differentially Private PCA. Alina Ene, Huy Le Nguyen, Ta Duy Nguyen. *In submission.*

2. META-STORM: Generalized Fully-Adaptive Variance Reduced SGD for Unbounded Functions. Zijian Liu*, Ta Duy Nguyen*, Thien Hang Nguyen*, Alina Ene, Huy Le Nguyen. *arXiv:2209.14853*, 2022.

1. On Adversarial Bias and the Robustness of Fair Machine Learning. Hongyan Chang*, Ta Duy Nguyen*, Sasi Kumar Murakonda*, Ehsan Kazemi, Reza Shokri. *arXiv:2006.08669*, 2020.

SKILLS

Programming: Proficient in Python (pytorch, tensorflow), Java.
Languages: Vietnamese: Native; English: TOEFL: 111 (2020); French: TCF: C1 (2017).

AWARDS

Best paper award, Genetic Algorithm track, GECCO 2017.	2017
NUS Research Scholarship (full funding for MSc degree).	2017 – 2019
Eiffel Scholarship (full funding at École Polytechnique).	2015 – 2017
ASEAN Scholarship (full funding for BComp degree).	2013 – 2017
53rd International Mathematical Olympiad Silver medal.	2012
Vietnam National Mathematical Olympiad Silver medals.	2011, 2012

TEACHING EXPERIENCE

Teaching Fellow for Advanced Optimization (CS531, Spring 2025), Boston University.
Teaching Fellow for Probability in Computing (CS237, Fall 2024), Boston University.
Teaching Assistant for Algorithmic Mechanism Design (CS4261/CS5461, Fall 2018), NUS.
Teaching Assistant for Introduction to AI (CS3244, Spring 2018), NUS.
Teaching Assistant for Programming Language Concepts (CS2104, Fall 2017), NUS.

ACADEMIC SERVICES

Co-organizer of the BU Algorithms and Theory Seminar (Spring-Fall 2025).
Reviewer: ICLR 2025, NeurIPS 2025, ICML 2025, JMLR 2025, AAAI 2025, NeurIPS 2024, ICML 2024, NeurIPS 2023, JMLR 2022, ICML 2022.
Subreviewer: STOC 2026, SODA 2026, RANDOM 2025, FOCS 2022, AAMAS 2021, AAAI 2020.