NGUYEN TA DUY

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EDUCATION

Ph.D. Student in Computer Science 09/2021 – present
Boston University, advised by Prof. Alina Ene. GPA: 3.93/4.

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 in Machine Learning: Design and analysis of algorithms in convex and non-convex optimization; Generalization in Machine Learning.
Theoretical Computer Science: Streaming algorithms, Fast algorithms on graphs.

EXPERIENCE

Visiting Graduate Student, Simons Institute for the Theory of Computing, University of California, Berkeley. 08/2023 – 12/2023
Research Assistant, National University of Singapore. 04/2019 – 08/2021
Research Intern, École Polytechnique & JDA Software Montreal. 04/2017 – 08/2017
Software Engineering Intern, Keluro Paris. 06/2016 – 09/2016

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

PUBLICATIONS

* = equal contribution, † = in alphabetical order.

Conference papers

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, *To appear*.

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*), *To appear*.

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. 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. Resource Based Cooperative Games: Optimization, Fairness and Stability. (†) **Ta Duy Nguyen**, Yair Zick. *Symposium on Algorithmic Game Theory*, SAGT 2018.

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

Manuscripts

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

Languages: Vietnamese: Native; English: TOEFL: 111 (2020); French: TCF: C1 (2017).
Programming: Proficient in Python (scikit-learn, PyTorch), Java.

TEACHING EXPERIENCE

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.

SERVICES

NeurIPS 2023 Reviewer. JMLR 2022 Reviewer. ICML 2022 Reviewer. FOCS 2022 Subreviewer. AAMAS 2021 Subreviewer. AAAI 2020 Subreviewer.