

Research interests: Theory of Machine Learning and Data Privacy

Education

- Sept. 2017–
now **PhD in Computer Science**, *Northeastern University*, Khoury College of Computer Sciences.
Advisors: Huy Lê Nguyễn and Jonathan Ullman
GPA: 3.96
- March 2015–
Sept. 2017 **Graduate Program in Logic, Algorithms, and Computation (MPLA)**, *University of Athens*,
Department of Mathematics, Greece.
GPA: 9.93/10
Thesis: “Online Facility Location with Switching Costs”
Advisor: Dimitris Fotakis
- Sept. 2008–
March 2015 **Diploma in Electrical and Computer Engineering**, *National Technical University of Athens*,
School of Electrical and Computer Engineering, Greece.
GPA: 8.28/10
Thesis: “The Multiplicative Weights Update Method in Mechanism Design”
Advisor: Dimitris Fotakis

Research Experience

- June–August
2022 **Research Intern**, *Apple*, Cupertino, California, USA.
Mentor: Audra McMillan
- June–August
2019 & 2020 **Research Intern**, *IBM Research - Almaden*, San Jose, California, USA.
Mentor: Thomas Steinke

Publications and Manuscripts

- Covariance-Aware Private Mean Estimation Without Private Covariance Estimation.**
Gavin Brown, Marco Gaboardi, Adam Smith, Jonathan Ullman, Lydia Zakyntinou
35th Conference on Neural Information Processing Systems, 2021. (NeurIPS’21, Spotlight presentation)
<https://arxiv.org/abs/2106.13329>
- PAC-Bayes, MAC-Bayes and Conditional Mutual Information: Fast rate bounds that handle general VC classes.**
Peter Grünwald, Thomas Steinke, Lydia Zakyntinou
34th Annual Conference on Learning Theory, 2021. (COLT’21)
<https://arxiv.org/abs/2106.09683>
- Differentially Private Decomposable Submodular Maximization.**
Anamay Chaturvedi, Huy Lê Nguyễn, Lydia Zakyntinou
35th AAAI Conference on Artificial Intelligence, 2021. (AAAI’21)
<https://arxiv.org/abs/2005.14717>
- Online Facility Location in Evolving Metrics.**
Dimitris Fotakis, Loukas Kavouras, Lydia Zakyntinou
Algorithms 2021, 14(3):73.
<https://doi.org/10.3390/a14030073>
- Private Identity Testing for High-Dimensional Distributions.**
Clément L. Cannone, Gautam Kamath, Audra McMillan, Jonathan Ullman, Lydia Zakyntinou
34th Conference on Neural Information Processing Systems, 2020. (NeurIPS’20, Spotlight presentation)
<https://arxiv.org/abs/1905.11947>

Reasoning About Generalization via Conditional Mutual Information.

Thomas Steinke and Lydia Zakyntinou
33rd Annual Conference on Learning Theory, 2020. (COLT'20)
<https://arxiv.org/abs/2001.09122>

Efficient Private Algorithms for Learning Large-Margin Halfspaces.

Huy Lê Nguyễn, Jonathan Ullman, Lydia Zakyntinou
31st International Conference on Algorithmic Learning Theory, San Diego, USA, 2020. (ALT'20)
<https://arxiv.org/abs/1902.09009>

Improved Algorithms for Collaborative PAC Learning.

Huy Lê Nguyễn and Lydia Zakyntinou
32nd Conference on Neural Information Processing Systems, Montréal, Canada, 2018. (NeurIPS'18)
<https://arxiv.org/abs/1805.08356>

Manuscripts

From Robustness to Privacy and Back.

Hilal Asi, Jonathan Ullman, Lydia Zakyntinou
Manuscript, 2023.
<https://arxiv.org/abs/2302.01855>

Multitask Learning via Shared Features: Algorithms and Hardness.

Konstantina Bairaktari, Guy Blanc, Li-Yang Tan, Jonathan Ullman, Lydia Zakyntinou
Manuscript, 2022.
<https://arxiv.org/abs/2209.03112>

Honors & Awards

- 2022 **Khoury College PhD Research Award**, Awarded annually to a doctoral student whose research makes a significant impact in the field.
- 2020 **Facebook Fellowship**, Merit-based award covering full stipend, tuition, and conference travel for two academic years.
- 2017 **Graduate Fellowship**, *Khoury College of Computer Sciences, Northeastern University*, Merit-based award covering full stipend and tuition for one academic year.
- 2017 **First Honor in the Graduate Program in Logic, Algorithms, and Computation**, *University of Athens*, for highest GPA in the class of 2017.
- 2008 **Eurobank “The Great Moment for Education” Fellowship**, Rewarding one top graduate from every high school in Greece based on their score in the nationwide examination.
- 2008 **Ministry of Education’s Commendation Certificate for Academic Performance**, for highest GPA in high school.

Invited Workshop Talks

Private Mean Estimation with Connections to Robustness, *Chicago Junior Theorists Workshop*, Northwestern University and TTIC, January 2023.

Private Mean Estimation with Connections to Robustness, *Keynote talk in Theory and Practice of Differential Privacy (ICML workshop)*, Baltimore, July 2022.

PAC-Bayes, MAC-Bayes and Conditional Mutual Information: Fast rate bounds that handle general VC classes, *New York Colloquium on Algorithms and Complexity*, CUNY, March 2021.

Reasoning about Generalization via Conditional Mutual Information, *First IBM Workshop on Information Theory*, IBM Research, September 2020.

Private Identity Testing for High-Dimensional Distributions, *New York Colloquium on Algorithms and Complexity*, CUNY, November 2019.

Private Identity Testing for High-Dimensional Distributions, *Workshop on Algorithms in Learning and Economics*, Rhodes, Greece, July 2019.

Service

Student representative of Faculty Hiring Committee, *Khoury College of Computer Sciences, Northeastern University*, 2021.

Organizer, *Boston-area Differential Privacy Seminar (Spring 2021)*, *NEU Theory Seminar (Spring 2019-Fall 2021)*, *Khoury PhD Women Group (Spring 2019-now)*.

Reviewer, *ICML 2020-2023*, *NeurIPS 2020-2023*, *COLT 2023*, *AAAI 2020*, *ALT 2020*, *ESA 2020*, *SODA 2019*, *Theoretical Computer Science (TCS) Journal*, *IEEE Transactions of Information Theory*, *Transactions on Machine Learning Research*.

Program Committee Member, *FACCT 2021-2023*, *TPDP 2020-2021*.

Teaching Experience

Fall '22 **Advanced Algorithms (CS7800)**, *Instructor: Jonathan Ullman*, NEU, Graduate.
Guest Lecturer

Fall '18 **Algorithms and Data (CS3000)**, *Instructor: Jonathan Ullman*, NEU, Undergraduate.
Teaching Assistant

Spring '15-'17 **Introduction to Computer Science**, *Instructors: Aris Pagourtzis, Stathis Zachos*, NTUA, Undergraduate.
Grader

Fall '14-'16 **Computer Programming**, *Instructors: Stathis Zachos, Dimitris Fotakis, Nikolaos Papaspyrou*, NTUA, Undergraduate.
Lab Instructor

Fall '14-'16 **Algorithms and Complexity**, *Instructor: Dimitris Fotakis*, NTUA, Undergraduate.
Teaching Assistant

Spring '15-'16 **Algorithms and Complexity**, *Instructor: Dimitris Fotakis*, NTUA, Graduate.
Teaching Assistant

Spring '16 **Algorithmic Game Theory**, *Instructor: Dimitris Fotakis*, NTUA, Graduate.
Teaching Assistant

Spring '15 **Social Networks**, *Instructor: Dimitris Fotakis*, NTUA, Graduate.
Teaching Assistant

Technical skills

LaTeX, C, Python

Languages

Greek native speaker
English fluent
French good command

TOEFL: 117/120, GRE: 162V / 168Q / 4.0W
Diplôme B2, Institut Français d'Athènes