Thodoris Lykouris

CONTACT INFORMATION	MIT Sloan School of Management 77 Massachusetts Ave, E62-590, Cambridge, MA 02142 E-mail: *lykouris@mit.edu* Website: http://thlykouris.com/

PRIMARY EMPLOYMENT

Assistant Professor　　　　　　　　　　　　　　　　**Jul. 2021 - present**
MIT Sloan School of Management, Cambridge, MA, United States

Postdoctoral Researcher　　　　　　　　　　　　　**Jul. 2019 - Jun. 2021**
Microsoft Research, New York City, NY, United States

EDUCATION

Ph.D. in Computer Science　　　　　　　　　　　　**Aug. 2013 - Aug. 2019**
Cornell University, Ithaca, NY, United States
- Ph.D. thesis: *Effective online decision-making in complex multi-agent systems*
- Advisor: Éva Tardos
- Committee: Éva Tardos, Jon Kleinberg, Karthik Sridharan, Siddhartha Banerjee

Diploma in Electrical and Computer Engineering　　　**Oct. 2006 - Oct. 2012**
National Technical University of Athens, Athens, Greece
- Diploma thesis: *Competitive diffusion and pricing under externalities*
- Supervisor: Dimitris Fotakis

HONORS AND AWARDS

George B. Dantzig Dissertation Award, Finalist (2020)
George Nicholson Student Paper Competition, Finalist (2018)
Google Fellowship in Algorithms, Optimization and Markets (2018)
Applied Probability Society Student Paper Competition, Finalist (2017)
Cornell University Fellowship (2013-2014)
University Award for graduating ECE NTUA with 2nd highest GPA (2012).

JOURNAL ARTICLES (ALPHABETICAL AUTHOR ORDER)

1. *Efficient decentralized multi-agent learning in asymmetric bipartite queueing systems*
   with Daniel Freund and Wentao Weng
   Operations Research; forthcoming
   https://arxiv.org/pdf/2206.03324.pdf
   Extended abstract appeared at COLT'22 (conference publication 3)
   Finalist in Applied Probability Society Student Paper Competition (2022)

2. *Static pricing for multi-unit prophet inequalities*
   with Shuchi Chawla and Nikhil Devanur
   Operations Reserch; fortchoming
   https://arxiv.org/pdf/2007.07990.pdf
   Extended abstract appeared at WINE'21 (conference publication 5)

3. *Corruption-robust exploration in episodic reinforcement learning*
   with Max Simchowitz, Aleksandrs Slivkins, and Wen Sun
   Mathematics of Operations Research; forthcoming
   https://arxiv.org/pdf/1911.08689.pdf
   Extended abstract appeared at COLT'21 (conference publication 7)

4. *Contextual search in the presence of adversarial corruptions*
   with Akshay Krishnamurthy, Chara Podimata, and Robert Schapire
   Operations Research; vol. 71, no. 4, pp. 1120-1135, 2023
   https://arxiv.org/pdf/2002.11650.pdf
   Extended abstract appeared at STOC'21 (conference publication 8)

5. *Competitive caching with machine learned advice*
   with Sergei Vassilvitskii
   Journal of the ACM; vol. 68, iss. 4, art. 24, pp. 1-25, 2021
   https://arxiv.org/pdf/1802.05399.pdf
   Extended abstract appeared at ICML'18 (conference publication 14)

6. *Small-loss bounds for online learning with partial information*
   with Karthik Sridharan and Éva Tardos
   Mathematics of Operations Research; vol. 47, no. 3, pp. 2186-2218, 2022
   https://arxiv.org/pdf/1711.03639.pdf
   Extended abstract appeared at COLT'18 (conference publication 16)
   Finalist in George Nicholson Student Paper Competition (2018)

7. *Pricing and optimization in shared vehicle systems: An approximation framework*
   with Siddhartha Banerjee and Daniel Freund
   Operations Research; vol. 70, no. 3, pp. 1783-1805, 2022
   https://arxiv.org/pdf/1608.06819.pdf
   Extended abstract appeared at EC'17 (conference publication 17)
   Finalist in Applied Probability Society Student Paper Competition (2017)

WORKING
PAPERS
(ALPHABETICAL
AUTHOR ORDER)

8. *Quantifying the cost of learning in queueing systems*
   with Daniel Freund and Wentao Weng
   https://arxiv.org/pdf/2308.07817.pdf
   Under preparation
   Extended abstract to appear at NeurIPS'23 (conference publication 1)

9. *Group fairness in dynamic refugee assignment*
   with Daniel Freund, Elisabeth Paulson, Bradley Sturt, and Wentao Weng
   Major revision in Management Science
   https://arxiv.org/pdf/2301.10642.pdf
   Extended abstract appeared at EC'23 (conference publication 2)

10. *Learning in Stackelberg games with non-myopic agents*
    with Nika Haghtalab, Sloan Nietert, and Alexander Wei
    Major revision in Operations Research
    https://arxiv.org/pdf/2208.09407.pdf
    Extended abstract appeared at EC'22 (conference publication 4)

11. *Stochastic bandits robust to adversarial corruptions*
    with Vahab Mirrokni and Renato Paes Leme
    Under review
    https://arxiv.org/pdf/1803.09353.pdf
    Extended abstract appeared at STOC'18 (conference publication 15)

12. *Learning and efficiency in games with dynamic population*
    with Vasilis Syrgkanis and Éva Tardos
    Under preparation
    https://arxiv.org/pdf/1505.00391.pdf
    Extended abstract appeared at SODA'16 (conference publication 19)

1. *Quantifying the cost of learning in queueing systems*
   with Daniel Freund and Wentao Weng
   https://arxiv.org/pdf/2308.07817.pdf
   37th Annual Conference on Neural Information Processing Systems (**NeurIPS 2023**)
   Journal version: Under preparation (working paper 8)

2. *Group fairness in dynamic refugee assignment*
   with Daniel Freund, Elisabeth Paulson, Bradley Sturt and Wentao Weng
   24th ACM Conference on Economics and Computation (**EC 2023**)
   Journal version: Under review (working paper 9)

3. *Efficient decentralized multi-agent learning in asymmetric queuing systems*
   with Daniel Freund and Wentao Weng
   35th Annual Conference on Learning Theory (**COLT 2022**)
   Journal version: Forthcoming in Operations Research (journal article 1)

4. *Learning in Stackelberg games with non-myopic agents*
   with Nika Haghtalab, Sloan Nietert, and Alexander Wei
   23rd ACM Conference on Economics and Computation (**EC 2022**)
   Journal version: Under review (working paper 10)

5. *Static pricing for multi-unit prophet inequalities*
   with Shuchi Chawla and Nikhil Devanur
   17th Conference on Web and Internet Economics (**WINE 2021**)
   Journal version: Forthcoming in *Operations Research* (journal article 2)

6. *Bayesian decision-making under misspecified priors with applications to meta-learning*
   Max Simchowitz, Christopher Tosh, Akshay Krishnamurthy, Daniel Hsu, ***TL***, Miroslav
   Dudík, Robert Schapire* *(contributional author order)*
   35th Annual Conference on Neural Information Processing Systems (**NeurIPS 2021**)
   https://arxiv.org/pdf/2107.01509.pdf

7. *Corruption-robust exploration in episodic reinforcement learning*
   with Max Simchowitz, Aleksandrs Slivkins, and Wen Sun
   34th Annual Conference on Learning Theory (**COLT 2021**)
   Journal version: Forthcoming in *Math. of Operations Research* (journal article 3)

8. *Contextual search in the presence of irrational agents*
   with Akshay Krishnamurthy, Chara Podimata, and Robert Schapire
   53rd ACM Annual Symposium on Theory of Computing (**STOC 2021**)
   Journal version: Forthcoming in *Operations Research* (journal article 4)

9. *Constrained episodic reinforcement learning in concave-convex and knapsack settings*
   with Kianté Brantley, Miroslav Dudík, Sobhan Miryoosefi, Max Simchowitz, Aleksandrs
   Slivkins, and Wen Sun
   34th Annual Conference on Neural Information Processing Systems (**NeurIPS 2020**)
   https://arxiv.org/pdf/2006.05051.pdf

10. *Bandits with adversarial scaling*
    with Vahab Mirrokni and Renato Paes Leme
    37th International Conference on Machine Learning (**ICML 2020**)
    https://arxiv.org/pdf/2003.02287.pdf

11. *Advancing subgroup fairness via sleeping experts*
    with Avrim Blum
    11th Innovations in Theoretical Computer Science Conference (**ITCS 2020**)
    https://arxiv.org/pdf/1909.08375.pdf

12. *Feedback graph regret bounds for Thompson Sampling and UCB*
    with Éva Tardos and Drishti Wali
    31st International Conference on Algorithmic Learning Theory (**ALT 2020**)
    https://arxiv.org/pdf/1905.09898.pdf

13. *On preserving non-discrimination when combining expert advice*
    with Avrim Blum, Suriya Gunasekar, and Nathan Srebro
    32nd Annual Conference on Neural Information Processing Systems (**NeurIPS 2018**)
    https://arxiv.org/pdf/1810.11829.pdf

14. *Competitive caching with machine learned advice*
    with Sergei Vassilvitskii
    35th International Conference on Machine Learning (**ICML 2018**)
    Journal version: *Journal of the ACM, 2021* (journal article 5)

15. *Stochastic bandits robust to adversarial corruptions*
    with Vahab Mirrokni and Renato Paes Leme
    50th ACM Annual Symposium on Theory of Computing (**STOC 2018**)
    https://arxiv.org/pdf/1803.09353.pdf
    Journal version: Under review (working paper 11)

16. *Small-loss bounds for online learning with partial information*
    with Karthik Sridharan and Éva Tardos
    31st Annual Conference on Learning Theory (**COLT 2018**)
    Journal version: *Mathematics of Operations Research, 2022* (journal article 6)

17. *Pricing and optimization in shared vehicle systems: An approximation framework*
    with Siddhartha Banerjee and Daniel Freund
    18th ACM Conference on Economics and Computation (**EC 2017**)
    Journal version: *Operations Research, 2022* (journal article 7)

18. *Learning in games: Robustness of fast convergence*
    with Dylan Foster, Zhiyuan Li, Karthik Sridharan, and Éva Tardos
    30th Annual Conference on Neural Information Processing Systems (**NeurIPS 2016**)
    https://arxiv.org/pdf/1606.06244.pdf

19. *Learning and efficiency in games with dynamic population*
    with Vasilis Syrgkanis and Éva Tardos
    27th ACM-SIAM Symposium on Discrete Algorithms (**SODA 2016**)
    https://arxiv.org/pdf/1505.00391.pdf
    Journal version: Under preparation (working paper 12)

20. *Influence maximization in switching-selection threshold models*
    with Dimitris Fotakis, Evangelos Markakis and Svetlana Obraztsova
    7th International Symposium on Algorithmic Game Theory (**SAGT 2014**)

TEACHING

Primary instructor
- Introduction to Operations Management (MIT Sloan MBA course 15.761)
  Spring 2022, Spring 2023, Spring 2024
- Hands-On Deep Learning (MIT Sloan MBAn course 15.S04)
  Spring 2023
- Theory of Operations Management (MIT Sloan PhD course 15.764)
  Spring 2024

Guest instructor
- One guest lecture for Fall 2022 UMass Amherst grad course *Algorithms with Predictions*
- One guest lecture for Fall 2020 Columbia IEOR graduate course *Machine Learning for Algorithm Design* of Eric Balkanski

- One guest lecture for Fall 2020 Cornell CS graduate course *Foundations of Reinforcement Learning* of Wen Sun and Sham Kakade
- Two guest lectures for Spring 2017 Cornell CS graduate course *Algorithmic Game Theory* of Éva Tardos
- Two guest lectures for Spring 2013 National Technical University of Athens ECE course *Approximation algorithms and Algorithmic Mechanism Design* of Dimitris Fotakis

Teaching assistant
- Sole teaching assistant for the Cornell CS graduate course *Algorithmic Game Theory* (Spring 2017)
- Member of a small group developing and grading programming and analytical problems for National Technical University of Athens ECE undergraduate course *Algorithms and Complexity* (Fall 2010, Fall 2011, Fall 2012)
- Helping students in programming assignments for National Technical University of Athens ECE undergraduate course *Introduction to Programming* (Fall 2011, Fall 2012)

PROFESSIONAL
SERVICE

Program organizer:
- **Interdisciplinary semester-long program: *Data-Driven Decision Processes***
  with Shipra Agrawal, Siddhartha Banerjee, and Shuchi Chawla
  August-December 2022, Simons Institute, Berkeley, CA, USA

Workshop organizer:
- **LeT-All Fall'23 mentoring workshop on *Communicating your research***
  with Surbhi Goel, Vidya Muthukumar, Vatsal Sharan and Lydia Zakynthinou
  October 2023, virtual
- **LeT-All Fall'22 mentoring workshop on *Expanding your research experience***
  with Surbhi Goel, Nika Haghtalab, Vidya Muthukumar, and Ellen Vitercik
  October 2022, virtual
- **Workshop on *Quantifying uncertainty: Stochastic, adversarial, and beyond***
  with Laura Doval and Kevin Jamieson
  September 2022, Simons Institute, Berkeley, CA, USA
- **ALT 2022 mentoring workshop: *Learning Theory Alliance (LeT-All)***
  with Surbhi Goel, Vidya Muthukumar, and Ellen Vitercik
  March 2022, virtual
- **ICML 2020 workshop: *Theoretical Foundations of Reinforcement Learning***
  with Emma Brunskill, Max Simchowitz, Wen Sun, and Mengdi Wang
  July 2020, virtual (scheduled for Vienna, Austria; moved due to COVID pandemic)

Journal Refereeing:
Management Science (MS), Mathematics of Operations Research (MOR), Operations Research (OR), Journal of the ACM (JACM), Journal of Machine Learning Research (JMLR), Operations Research Letters (ORL), Transactions on Algorithms (TALG), Transactions on Economics and Computation (TEAC), Theory of Computing Systems (TOCS)

Conference Program Committee:
- Conference on Learning Theory (COLT): 2020, 2021, 2022, 2023, 2024
- Algorithmic Learning Theory (ALT): 2022, 2023, 2024
- Economics and Computation (EC): 2020, 2021, 2023
- Conference on Web and Internet Economics (WINE): 2022
- Symposium on Discrete Algorithms (SODA): 2022
- International Conference on Machine Learning (ICML): 2020
- Neural Information Processing Systems (NeurIPS): 2019, 2020
- The Web Conference (TheWebConf): 2019, 2020

INFORMS Award Judge:
- George Nicholson Student Paper Competition: 2023, 2024
- Applied Probability Society Student Paper Competition: 2021, 2022
- Health Application Society Pierskalla Award Competition: 2021

INTERNSHIPS & RESEARCH VISITS	**Research intern** at Microsoft Research Redmond (May-August 2018)
	Visiting student at TTI-Chicago hosted by Avrim Blum (March-May 2018)
	Research intern at Google Research NYC (May-August 2017)
	Visiting student at Simons Institute in Berkeley for semesters on *Real-time decision making* (January-March 2018) & *Economics and Computation* (August-December 2015)
	Research intern at Microsoft Research India (June-August 2015)