Adrian Rivera Cardoso

Contact Information

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Education

Georgia Institute of Technology, Atlanta, GA

Ph.D. Operations Research. *Advisors*: Huan Xu, He Wang — 2015 - 2019

Thesis: Advances in online convex optimization, games, and problems with bandit feedback

M.S. Operations Research — 2015 - 2017

The University of Texas at Austin, Austin, TX

B.S. Mechanical Engineering, B.A. Economics — 2012 - 2015

Interests

I am interested in problems at the intersection of optimization, machine learning, statistics, and finance. I blog about these topics at: www.adrianriv.com/blog/.

Experience

Senior Software Engineer (Machine Learning), LinkedIn — 2020 - Present

A few projects I have worked on that made it to production:

- A machine learning algorithm to generate Differentially Private synthetic data in distributed computing environments for analytics. This was used to power a new product for advertisers that provides them analytics about their ad campaigns.
- A library of Differentially Private algorithms for real-time analytics. The service it powers currently handles hundreds of queries per second.
- An algorithm to cluster individuals for ad targeting, resulting in a twofold increase in auction depth.

Research Assistant, Georgia Institute of Technology — 2016 - 2019

Focused on sequential decision making in unknown and non-stationary environments. I worked on problems related to Reinforcement Learning, Multi Armed Bandits, and Online Learning, I also explored connections with Generative Adversarial Networks and Game Theory. My research was published in top Machine Learning venues.

Data Scientist (Intern), Roadie Inc. — May-Aug 2018, May-Aug 2019

Roadie is a platform for delivery of packages that uses crowdsourced drivers. During my internships I helped with the development of algorithms that: notify drivers of packages they might be interested in, dynamically adjust the price of packages, and find good matches between packages and drivers. I helped with the design, implementation, and testing of the algorithms.

Publications

1. **Cardoso, A. R.**, Rogers R. "Differentially Private Histograms under Continual Observation: Streaming Selection into the Unknown". In *Proceedings of The 25th International Conference on Artificial Intelligence and Statistics (AISTATS)*, 2022.
2. **Cardoso, A. R.**, Wang H. and Xu, H. "Large Scale Markov Decision Processes with Adversarial Rewards". Accepted at *Neural Information Processing Systems (NeurIPS)*, 2019.
3. **Cardoso, A. R.**, Abernethy J, Wang H. and Xu, H. "Competing Against Equilibria in Zero-Sum Games with Evolving Payoffs". In *Proceedings of the International Conference on Machine Learning (ICML)*, 2019.

4. **Cardoso, A. R.**, Wang H. and Xu, H. "The Online Saddle Point Problem and Online Convex Optimization with Knapsacks". Under revision at *Mathematics of Operations Research*.

5. **Cardoso, A. R.**, Xu, H. "Risk-Averse Stochastic Convex Bandit". In *Proceedings of the 22nd International Conference on Artificial Intelligence and Statistics (AISTATS)*, 2019.

6. **Cardoso, A. R.**, Cummings, R. "Differentially Private Online Submodular Minimization". In *Proceedings of the 22nd International Conference on Artificial Intelligence and Statistics (AISTATS)*, 2019.

Coding Skills

- Python
- Scala/Spark
- SQL
- Git/Github

Teaching Experience

Teaching Assistant, Georgia Institute of Technology Spring 2016 - Fall 2017

- Linear Optimization
- Advanced Optimization and Convexity
- Operations Research for Supply Chain
- Regression Analysis

Awards

- Fellow, Postdoctoral Networking Tour in Artificial Intelligence, German Academic Exchange Service — Oct 2020
- Research Fellowship, Algorithms & Randomness Center — Spring 2018
- Scholarship for Graduate Studies, CONACYT (Mexican NSF) — 2015-2016
- E.D. Farmer Fellowship, The University of Texas — 2012-2015

Service

- Reviewer for: AISTATS 2020-21, ICML 2020-23, NeuRIPS 2020-23, COLT2020-23
- Co-organizer of the weekly ISYE student seminar — Jan - Dec 2018
- Member of the Graduate Student Advisory Committee — Jan 2016 - Dec 2018

Presentations

Conferences

- Competing Against Equilibria in Zero-Sum Games with Evolving Payoffs, at ICML, Long Beach, CA — June 2019
- Risk-Averse Stochastic Convex Bandit, at AISTATS, Japan — Apr 2019
- Differentially Private Online Submodular Minimization, at AISTATS, Japan — Apr 2019

Georgia Institute of Technology

- A Quick Tutorial on Online Learning, — Sept 2018
- Differentially Private Online Submodular Optimization — Dec 2017

References

Xu, Huan (Ph.D. Advisor)
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