

Matheus Venturyne Xavier Ferreira

PERSONAL DATA

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RESEARCH INTERESTS

Algorithms, Game Theory, Cryptography, Security

APPOINTMENTS

Harvard University, MA, USA

POSTDOCTORAL FELLOW IN COMPUTER SCIENCE

Starting Oct 2021

EDUCATION

Princeton University, NJ, USA

Ph.D in COMPUTER SCIENCE

Sept 2016 - Present

Committee: S. Matthew Weinberg (Chair), Arvind Narayanan, David Parkes, Mark Braverman, Ran Raz

University of California, San Diego, CA, USA

Exchange student with a fully funded [BSMP Scholarship](#) (GPA: 3.92/4.00)

Jan 2014 - Dec 2014

Universidade Federal de Itajubá, Itabira, MG, Brazil

B.S. with Honors in COMPUTER ENGINEERING (GPA: 93.3/100)

Jan 2011 - July 2016

SELECT HONORS AND AWARDS

- [SEAS Award for Excellence](#), Princeton University Dec 2020
- [LATInE Fellow](#), Purdue University July 2020
- Dean's Grant, Princeton University 2016 - 2021
- First Year Fellowship in Engineering, Princeton University Sept. 2016 - June 2017
- Congratulations from Higher Counsel, Universidade Federal de Itajubá June 2016
- [Motion of Applause](#), Municipal Chamber of Itabira 2016
- [CNS Espresso Prize for Excellence in Networking](#), University of California, San Diego 2014
- 1st place in 2nd Line Follower Robot Competition, Universidade Federal de Itajubá [[Video](#)] 2013

PUBLICATIONS

1. Matheus V. X. Ferreira, Daniel J. Moroz, David C. Parkes, and Mitchell Stern. Dynamic posted-price mechanisms for the blockchain transaction-fee market. In *Proceedings of the 3rd ACM conference on Advances in Financial Technologies*, AFT '21, New York, NY, USA, 2021. Association for Computing Machinery
2. Matheus V. X. Ferreira and S. Matthew Weinberg. Proof-of-stake mining games with perfect randomness. In *Proceedings of the 22nd ACM Conference on Economics and Computation*, EC '21, page 433–453, New York, NY, USA, 2021. Association for Computing Machinery
3. Matheus V. X. Ferreira and S. Matthew Weinberg. Credible, truthful, and two-round (optimal) auctions via cryptographic commitments. In *Proceedings of the 21st ACM Conference on Economics and Computation*, EC '20, pages 683–712, New York, NY, USA, 2020. Association for Computing Machinery
4. Tithi Chattopadhyay, Nick Feamster, Matheus V. X. Ferreira, Danny Yuxing Huang, and S. Matthew Weinberg. Selling a single item with negative externalities. In *The World Wide Web Conference*, WWW '19, pages 196–206, New York, NY, USA, 2019. Association for Computing Machinery

WORKING PAPERS

1. Meryem Essaidi, Matheus V.X. Ferreira, and S. Matthew Weinberg. Credible, strategyproof, optimal, and bounded expected-round single-item auctions for all distributions

SERVICE

Program Committee

- [Cryptoeconomic Systems](#), 2020, 2021.
- [Global Challenges in Economics and Computation](#), 2020.

Reviewing

- [SODA](#), 2022.
- [ACM EC](#), 2021.
- [USENIX Security Symposium](#), 2021.
- [Games and Economic Behavior](#), 2020.
- [ACM Advances in Financial Technologies \(AFT\)](#), 2020.
- [Innovations of Theoretical Computer Science \(ITCS\)](#), 2019, 2020.
- [Conference on Web and Internet Economics \(WINE\)](#), 2018, 2019, 2020.

TALKS

Economics and computation in decentralized systems

- Microsoft Research, Redmond, [Slides](#) Mar 2021

Algorithms, game theory and blockchains

- Reading group at ORFE, Princeton University, [Slides](#) Mar 2021

Dynamic Posted-Price Mechanisms for the Blockchain Transaction fee market

- 16th Workshop on the Economics of Networks, Systems and Computation July 2021

Proof-of-Stake Mining Games with Perfect Randomness

[Short Talk](#)

- 22nd ACM Conference on Economics and Computation July 2021
- [Princeton Research Day](#), Princeton University May 2021
- Theory day, Princeton University April 2021
- Poster, [Tapia Conference](#) Sept 2020
- Poster, [CRA-WP](#), Austin, Texas Mar 2020

Credible, Truthful, and Two-Round (Optimal) Auctions via Cryptographic Commitments

[Long Talk](#), [Short Talk](#)

- INFORMS Virtual 2020 Annual Meeting Nov 2020
- Poster, [LATinE](#), Purdue University July 2020
- 21st ACM Conference on Economics and Computation July 2020
- [Princeton Research Day](#), Princeton University May 2020
- Lightning Talk and Poster, WINE 2019, Columbia University Dec 2019
- Theory of Computer Science Group, Princeton University June 2019

Selling a Single Item with Negative Externalities: To Regulate Production or Payments?

- The Web Conference, San Francisco May 2019
- Poster, 19th ACM EC 2018, Cornell University June 2018

TEACHING

Princeton University - Teaching Assistant

Spring 2020	Junior Independent Work (COS 398)
Spring 2018	Economics and Computation (COS 445)
Fall 2017	Computation Geometry (COS 451)

Universidade Federal de Itajuba - Teaching Assistant

2015	Computer Security
2013	Objected-Oriented Programming (ECO 30)

UNDERGRADUATE STUDENTS MENTORING

- Tinashe Handina. *Princeton University*, now CS Ph.D at Caltech
Combinatorial credible auctions. June 2020 – Present
- Catherine Yu. *Princeton University*
Incentives in the Algorand blockchain. June 2020 – Present

DIVERSITY, INCLUSION & OUTREACH

- Mentor, Algorithmic Game Theory Mentoring Workshop (AMW), SIGECOM 2020
- Peer Mentor, [Graduate Scholars Program](#), Princeton University 2019 – 2021
- Peer Educator, [LGBTQIA Peer Ed Program](#), Princeton University 2019 - 2020
- Mentor, [Princeton Summer Programming Experience](#), Princeton University 2017
- Mentor, [Princeton Women in Computer Science](#), Princeton University 2016 - 2017

RESEARCH EXPERIENCE

- Research Assistant, Harvard University, MA, USA
Supervisor: Professor [David C. Parkes](#) June - Sept 2020
- Research Assistant, Princeton University, NJ, USA
Supervisor: Professor [S. Matthew Weinberg](#) June 2017 - Present
- Research Assistant, Universidade Federal de Minas Gerais, MG, Brazil
Supervisor: Professor Fernando Afonso Santos Sept 2013 - Feb 2014
- Research Assistant, Universidade Federal de Itajuba, MG, Brazil
Supervisor: Professor Carlos Henrique da Silveira July 2011 - Feb 2013

INDUSTRY EXPERIENCE

- Broadcom Corporation at San Diego, CA, USA
Software Development Engineer Intern in Bluetooth/NFC (Supervisor: David Hughes) June - Sept 2014

SOFTWARE

Vein: Rivers of Blood [\[Video\]](#): A distributed, real-time, 3D, multiplayer survival race game of microorganisms in the human body using C++ and DirectX11. My contributions focused on physics simulation, artificial intelligence and developing the game engine.

LANGUAGES

PORTUGUESE:	Mother tongue
ENGLISH:	Fluent

COMPUTER SKILLS

Programming:	Python, C/C++, Java, Matlab, OpenGL, SQL, JavaScript, OCaml, R, Perl
Others:	LINUX, Windows, Bash, GDB, Git, \LaTeX