

Matheus Venturyne Xavier Ferreira

PERSONAL DATA

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RESEARCH INTERESTS

Economics and Computation and the interplay of Algorithms, Game Theory, Security, Fairness and Policy.

EDUCATION

Princeton University, Princeton, NJ, USA

Ph.D Candidate in COMPUTER SCIENCE advised by Matt Weinberg 2021

Committee: Arvind Narayanan, David Parkes, Mark Braverman, Ran Raz, Matt Weinberg

Honors & Awards:

[School of Engineering and Applied Sciences Award for Excellence](#) 2020

Dean's Grant 2016 — 2021

Fellowship in Engineering and Applied Sciences 2016

Universidade Federal de Itajuba, Itabira, MG, Brazil

B.S. in COMPUTER ENGINEERING (GPA: 93.3/100) 2016

Honor & Awards:

Academic Accolade for best student 2016

VISITING STUDENT at **University of California, San Diego** (GPA: 3.92/4.00) 2014

Funded by [BSMP Scholarship](#)

[CNS Espresso Prize for Excellence in Networking](#) 2014

1st place in Line Follower Robot Competition 2013

HONORS AND AWARDS

- [Tapia Scholarship](#), Tapia Conference Sept 2020
- [LATInE Fellow](#), Purdue University July 2020
- [2020 CRA-WP Grad Cohort for URMD](#), CRA Mar 2020
- [AGT Mentoring Workshop Grant](#), ACM June 2019
- [Motion of Applause](#), Municipal Chamber of Itabira May 2016

PUBLICATIONS (AUTHORS ARE ORDERED ALPHABETICALLY)

1. Matheus V. X. Ferreira and S Matthew Weinberg. Proof-of-stake mining games with perfect randomness. In *Forthcoming in Proceedings of the 22nd ACM Conference on Economics and Computation*, EC 21, New York, NY, USA, 2021. Association for Computing Machinery
2. 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
3. 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 (AUTHORS ARE ORDERED ALPHABETICALLY)

1. Matheus V. X. Ferreira, Daniel J. Moroz, David C. Parkes, and Mitchell Stern. Dynamic posted-price mechanisms for the blockchain transaction-fee market, 2021

WORK EXPERIENCE & LONG TERM VISITS

Research Experience

- Research Assistant, Harvard University June — Sept 2020
Supervisor: Professor [David C. Parkes](#)
- Research Assistant, Princeton University June 2017 — Aug 2021
Supervisor: Professor [S. Matthew Weinberg](#)
- Undergraduate Research Assistant, Universidade Federal de Minas Gerais Sept 2013 — Feb 2014
Supervisor: Professor Fernando Afonso Santos
- Undergraduate Research Assistant, Universidade Federal de Itajuba July 2011 — Feb 2013
Supervisor: Professor Carlos Henrique da Silveira

Engineering Experience

- Broadcom Corporation at San Diego, California June — Sept 2014
Software Development Engineer Intern in Bluetooth/NFC
Supervisor: David Hughes

Consulting Experience

- Offchain Labs 2020

SERVICE

Program Committee

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

Reviewing

- [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

Proof-of-Stake Mining Games with Perfect Randomness

[Short Talk](#)

- [Princeton Research Day](#), Princeton University May 2021
- Theory day, Princeton University April 2021
- Poster, [Tapia Conference](#), Virtual Event 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
- [ACM Conference on Economics and Computation](#) July 2020
- [Princeton Research Day](#), Princeton University May 2020
- Lightning Talk and Poster, [WINE](#), 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* Summer 2020 – Present
Combinatorial credible auctions.
- Catherine Yu. *Princeton University* Summer 2020 – Present
Incentives in the Algorand blockchain.

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
- Mentor, [Princeton Summer Programming Experience](#), Princeton University 2017
- Mentor, [Princeton Women in Computer Science](#), Princeton University 2016

SOFTWARE

UNIVERSITY OF CALIFORNIA, SAN DIEGO

Vein – Rivers of Blood [\[Video\]](#) (Supervised by Geoff Voelker)

- Developed a distributed, real-time, 3D, multiplayer survival race game of microorganisms in the human body using C++ and DirectX11.

LANGUAGES

PORTUGUESE: Mothertongue
ENGLISH: Fluent

COMPUTER SKILLS

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