

Matheus Venturyne Xavier Ferreira

PERSONAL DATA

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RESEARCH INTERESTS

I'm broadly interested in Algorithmic Design under Uncertainty and the interplay of Algorithmic Game Theory, Information Security, Fairness and Policy.

EDUCATION

In Progress	Doctor of Philosophy in COMPUTER SCIENCE, Princeton University PhD Advisor: S. Matthew Weinberg
SEPT. 2018	M.A. in COMPUTER SCIENCE at Princeton University Committee: Mark Braverman, Ed. Felten, Ran Raz, Matt Weinberg
JULY 2016	B.S. in COMPUTER ENGINEERING at Universidade Federal de Itajuba Itabira, Brazil GPA: 93.3/100

HONORS AND AWARDS

• SEAS Award for Excellence , Princeton University	Dec 2020
• Tapia Scholarship	Sept 2020
• LATInE Fellow , Purdue University	July 2020
• 2020 CRA-WP Grad Cohort for URMD	March. 2020
• AGT Mentoring Workshop Grant , ACM	June 2019
• Dean's Grant, Princeton University	2016 - 2021
• First Year Fellowship in Engineering, Princeton University	Sept. 2016
• Academic Accolade for best student, Unifei	July 2016
• Congratulations from Higher Counsel, Unifei Higher Counsel	June 2016
• Motion of Applause , Municipal Chamber of Itabira	May 2016
• George Varghese Espresso Prize , UC San Diego	Dec 2014
• Brazil Scientific Mobility Program , Brazilian Government	JAN-DEC 2014
• Fapemig Research Scholarship, LOTMine, UFMG, Brazil	Sept 2013
• 1 st place in Line Follower Robot Competition, Unifei, Brazil	Sept 2013
• Fapemig Research Scholarship, Unifei, Brazil	Feb 2012

PUBLICATIONS

Authors in Alphabetical Order

1. 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, page 683–712, New York, NY, USA, 2020. Association for Computing Machinery
2. 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, page 196–206, New York, NY, USA, 2019. Association for Computing Machinery

WORKING PAPERS

1. Matheus V. X. Ferreira and S. Matthew Weinberg. Proof-of-stake mining games with perfect randomness. 2020
2. Matheus V. X. Ferreira, Sally Hahn, S. Matthew Weinberg, and Catherine Yu. Stake gridding attacks in algorand. 2020

WORK EXPERIENCE & LONG TERM VISITS

- Research Assistant, Harvard University June – Sept 2020
Supervisor: Professor [David Parkes](#)
- Research Assistant, Princeton University June 2017 – Present
Supervisor: Professor [S. Matthew Weinberg](#)
- Non-degree international student, University of California, San Diego 2014
GPA: 3.92/4.00
- Broadcom Corporation at San Diego, California Jun-Sept 2014
Software Development Engineer Intern in Bluetooth/NFC Software Team
Supervisor: David Hughes

SERVICE

Program Committee

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

Reviewing

- [Games and Economic Behavior](#) (2019 – 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

Proof-of-Stake Mining Games with Perfect Randomness

- Poster Session, [Tapia Conference](#), Virtual Event Sept 2020
- Poster Session, [CRA-WP](#), Austin, Texas March 2020

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

- INFORMS Virtual 2020 Annual Meeting Nov 2020
- Poster Session, [LATinE](#), Purdue University July 2020
- [ACM Conference on Economics and Computation](#), [Video](#) July 2020
- [Princeton University Research Day](#), [Video](#) May 2020
- Lightning Talk and Poster Session, [WINE](#), Columbia University December 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 Session, 19th ACM EC 2018, Cornell University June 2018
- Mechanism Design Seminar, Princeton University June 2017

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.
- Matteo Russo. *Princeton University* Summer 2020
Characterizing the design space of single-item cryptographic auctions.
- Catherine Yu. *Princeton University* Summer 2020
Incentives in the Algorand blockchain.
- Michelle Woo. *Princeton University* Fall 2020 – Present
Computing optimal selfish mining strategies for Proof-of-Stake blockchains via MDPs.
- Sang Truong. *DePauw University* Fall 2020 – Present
Automatic market makers.

DIVERSITY, INCLUSION & OUTREACH

- Mentor, Algorithmic Game Theory Mentoring Workshop (AMW), SIGECOM, 2020.
- Peer Mentor, [Graduate Scholars Program](#), Princeton University, 2019 to Present.
- 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

Jun 2014	<div>UNIVERSITY OF CALIFORNIA, SAN DIEGO</div> <div>Vein – Rivers of Blood</div> <div>Class Project Supervised by Geoff Voelker</div> <div><ul style="list-style-type: none">Developed a distributed, real-time, 3D, multiplayer survival race game of microorganisms in the human body using C++ and DirectX11.</div>
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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, ~~TEX~~

REFERENCES

Dr. Matthew Weinberg

Assistant Professor
Computer Science Department
Princeton University
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Dr. Nick Feamster

Neubauer Professor
Computer Science Department
Chicago University
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Dr. David Parkes

George F. Colony Professor
Computer Science Department
Harvard University
parkes@eecs.harvard.edu

Dr. Danny Y. Huang

Assistant Professor
Electrical and Computer Engineering Dept.
New York University
yuxingh@cs.princeton.edu