

# Matheus Venturyne Xavier Ferreira

## PERSONAL DATA

SEPTEMBER 15, 2021

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## RESEARCH INTERESTS

Algorithms, Game Theory, Cryptography, Security

## APPOINTMENTS

**Harvard University**, MA, USA

POSTDOCTORAL FELLOW IN COMPUTER SCIENCE

Starting Sept 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

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

Jan 2014 - Dec 2014

**Universidade Federal de Itajuba**, Itabira, MG, Brazil

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

Jan 2011 - July 2016

## SELECTED 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, Unifei Higher Counsel June 2016
- [Motion of Applause](#), Municipal Chamber of Itabira 2016
- [CNS Espresso Prize for Excellence in Networking](#), UC San Diego 2014
- 1<sup>st</sup> place in Line Follower Robot Competition, Unifei 2013

## RESEARCH PAPERS

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. Matheus V. X. Ferreira, S. Matthew Weinberg, Danny Yuxing Huang, Nick Feamster, and Tithi Chattopadhyay. 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

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1. Matheus V.X. Ferreira, Meryem Essaidi, and S. Matthew Weinberg. Credible, strategyproof, optimal, and bounded expected-round single-item auctions for all distributions
2. Catherine Yu, Sally Hahn, Matheus V. X. Ferreira, and S. Matthew Weinberg. Optimal cheating in algorand's proof-of-stake protocol
3. Tinashe Handina, Matheus V. X. Ferreira, and S. Matthew Weinberg. Credible non ascending single unit auction

## UNDERGRADUATE STUDENTS MENTORING

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

## TEACHING EXPERIENCE

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### 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)

## SERVICE

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### 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.

## INDUSTRY EXPERIENCE

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

## SOFTWARE

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**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.

## COMPUTER SKILLS

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