

# Matheus V. X. Ferreira

May 5, 2020

## PERSONAL DATA

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## RESEARCH INTERESTS

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I'm broadly interested in Algorithmic Design under Uncertainty and the interplay of Algorithmic Game Theory and Computer Security.

## EDUCATION

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In Progress	Doctor of Philosophy in COMPUTER SCIENCE, <b>Princeton University</b> Research Advisor: Matthew Weinberg
SEPT 2018	M.A. in COMPUTER SCIENCE, <b>Princeton University</b> GPA: 3.95/4.00
JULY 2016	B.S. in COMPUTER ENGINEERING at <b>Universidade Federal de Itajuba</b> GPA: 92.8/100
JAN-DEC 2014	Non-degree international student, <b>University of California, San Diego</b> GPA: 3.92/4.00

## WORK EXPERIENCE

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Jun-Sept 2014	Broadcom Corporation at San Diego, California <i>Software Development Engineer Intern in Bluetooth/NFC Software Team</i> Supported the BTE Bluetooth stack, profiles and protocols - software development, debugging and testing. Developed enhancements in Broadcom WICED and Bluetooth tracing and testing tools
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## RESEARCH PAPERS

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1. Matheus VX Ferreira and S Matthew Weinberg. Proof-of-stake mining games with perfect randomness. 2020
2. Matheus VX Ferreira and S Matthew Weinberg. Credible, truthful, and bounded-round mechanisms via cryptographic commitments. *2020 ACM Conference on Economics and Computation*, 2020. To appear
3. Matheus VX 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*, pages 196–206, 2019

## HONORS AND AWARDS

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- [2020 Computer Research Association-WP Grad Cohort for URMD](#)

Nov. 2019

- [AGT Mentoring Workshop](#) Grant, ACM June 2019
- Dean's Grant, Princeton University June 2021 SEPT 2016
- First Year Fellowship, Princeton University Sept. 2016
- Academic Accolade for best student, Universidade Federal de Itajuba July 2016
- Congratulations from Higher Counsel, Unifei Higher Counsel June 2016
- [Motion of Applause](#), Municipal Chamber of Itabira, MG, Brazil May 2016
- [George Varghese Espresso Prize](#), UC San Diego Dec. 2014
- [Brazil Scientific Mobility Program](#), UC San Diego JAN-DEC 2014
- Fapemig Research Scholarship, LOTMine, UFMG, Brazil Sept 2013
- 1<sup>st</sup> Line Follower Robot Competition, Unifei, Brazil Sept 2013
- Fapemig Research Scholarship, Unifei, Brazil Feb 2012

## MANUSCRIPTS

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- [Constructive Discrepancy Minimization for Convex Sets](#), joint with Corey Sinnamon, 2019.
- [Make Crypto Great Again](#), joint with Malte Möser, 2016.
- [Dolphin: Dataplane Load-balancing in Programmable Hybrid Networks](#), joint with Andrew Or and Chaitanya Aluru, 2016.
- [Automatic Offloading of Java Applications](#), 2016.
- [Caracterização de descontinuidade de fitas em favor de helices em estruturas proteicas toda-beta](#), 2013.

## TALKS

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### Proof-of-Stake Mining Games with Perfect Randomness

- Poster Session, CRA-WP, Austin, Texas March 2020

### Credible, Truthful, and Bounded-Round Mechanisms via Cryptographic Commitments

- [Princeton University Research Day](#) May 2020
- 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, Ithaca, NY June 2018
- Mechanism Design Seminar, Princeton University June 2017

### The matroid secretary problem for minor-closed classes and random matroids

- Mechanism Design Seminar, Princeton University March 2018

### Simple $\log \log \text{rank}$ competitive algorithm for matroid secretary

- Gems of TCS, Princeton University December 2018

### Rational secret sharing and secure multi-party computation

## SOFTWARE

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

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Open Problems in Algorithmic Game Theory, Analytic Methods in TCS, Theoretical Machine Learning, Advanced Cryptography, The Probabilistic Method, Advanced Algorithm Design, Probability in High Dimension, Information Theory and Applications, Advanced Computer Networks, Automated Reasoning about Software.

## TEACHING

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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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### Journal Reviewer

- [Cryptoeconomic Systems](#) (Spring 2020).
- [Games and Economic Behavior](#) (2019 to Present).

### Invited External Reviewing

- Innovations of Theoretical Computer Science (ITCS) 2019, 2020.
- Conference on Web and Internet Economics (WINE) 2018, 2019.

## DIVERSITY, INCLUSION & OUTREACH

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- Peer Mentor, [Graduate Scholars Program](#), Princeton University, 2019.
- 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

## LANGUAGES

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PORTUGUESE:	Mothertongue
ENGLISH:	Fluent

## COMPUTER SKILLS

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