Matheus Venturyne Xavier Ferreira

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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
July 2016	B.S. in Computer Engineering at **Universidade Federal de Itajuba**, Itabira, Brazil Gpa: 92.8/100

Honors and Awards

- LATInE Fellow — July 2020
- 2020 CRA-WP Grad Cohort for URMD — March. 2020
- 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, 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, UC San Diego — Jan–Dec 2014
- Fapemig Research Scholarship, LOTMine, UFMG, Brazil — Sept 2013
- 1^{st} Line Follower Robot Competition, Unifei, Brazil — Sept 2013
- Fapemig Research Scholarship, Unifei, Brazil — Feb 2012

Publications

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

Work Experience & Long Term Visits

Jan–Dec 2014	Non-degree international student, **University of California, San Diego** GPA: 3.92/4.00
Jun-Sept 2014	Broadcom Corporation at San Diego, California *Software Development Engineer Intern in Bluetooth/NFC Software Team* Supported the BTE Blueotooth stack, profiles and protocols – software development, debugging and testing. Developed enhancements in Bradcom WICED and Bluetooth tracing and testing tools

Manuscripts

- 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

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 $\log\log rank$ **competitive algorithm for matroid secretary**

- Gems of TCS, Princeton University — December 2018

Rational seceret sharing and secure multi-party computation

- Gems of TCS, Princeton University — October 2017

Software

Jun 2014 | University of California, San Diego
Vein – Rivers of Blood
Class Project Supervised by Geoff Voelker

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

Course Work

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

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

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

- 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

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