

# Daniel Aronoff

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(248)840-1476

Citizenship: USA

## Research interests

Industrial Organization, Digital currencies, Smart contracts, Blockchain protocols, Financial markets and Machine learning

## Education

- 2017 - 2022 **Massachusetts Institute of Technology** – Cambridge, MA  
PhD in Economics  
Thesis Advisors: Professors Nikhil Agarwal, Glenn Ellison and Robert Townsend  
Doctorate awarded September 2022
- London School of Economics and Political Science** – London, UK  
B.Sc. Econ in Philosophy and Economics  
Tutors: Professors Peter Urbach (Philosophy) and John Sutton (Economics)  
Graduated with *First Class Honours*
- University of Michigan** – Ann Arbor, MI  
Studied Russian Intellectual History  
Mentor: Professor Arthur Mendel

## Honors and academic appointments

- 2022 - Present Research Scientist, MIT Media Lab @ Digital Currency Initiative
- 2022 - Present Research Associate, The Laboratory for Economic Analysis and Design at MIT
- 2023 Program Committee *Cryptoeconomic Systems Conference (CES Spring 2024)* at MIT
- 2022 Program Committee *4th Conference on Advances in Financial Technology (AFT 2022)*, MIT
- 2019 - 2022 MIT Media Lab Digital Currency Initiative Collaborator
- 2021 Co- Principal Investigator (with Isaac Ardis), Ethereum Classic Labs Game Theoretic Security Study
- 2021 Referee/reviewer *Cryptoeconomics Journal*. MIT Press

## Publications and Working Papers

- 2000- Present **Over 100 Published Letters to the Editor, The Financial Times Newspaper**  
Daniel Aronoff
- 2024 **A Trading Mechanism for the Repo Market**  
Daniel Aronoff and Robert Townsend  
*Working paper MIT*
- 2024 **Targeted Nakamoto: A Proof-of-Work Protocol Augmentation to Improve Security and Limit Energy Consumption**  
Daniel Aronoff  
*Working Paper MIT*
- 2024 **ADESS: A Proof of Work Protocol Modification to Deter Double-Spend Attacks**  
Daniel Aronoff and Isaac Ardis  
*Accepted for presentation at Future of Information and Communications Conference, Berlin Germany April 2024 (FICC2024)*  
Accepted for publication in Springer series **Advances in Intelligent Systems and Computing**  
<https://arxiv.org/abs/2309.14551>
- 2023 **Conservation Priorities and Environmental Offsets: Markets for Florida Wetlands**  
Daniel Aronoff and Will Rafey  
<https://www.nber.org/papers/w31495>  
*American Economic Review* revise and resubmit
- 2023 **DeFi for the Securites Industry**  
Daniel Aronoff  
*Finadium Research Report, April 2023*
- 2022 **Bank Stablecoins vs. Central Bank Digital Currencies for Capital Markets**  
Daniel Aronoff and Josh Galper  
*Finadium Research Report, October 2022*
- 2022 **Essays on Incentive Designs to Improve Market Performance**  
Daniel Aronoff  
*Doctoral Dissertation, MIT*  
<https://dspace.mit.edu/handle/1721.1/147218>

- 2022 **A Smart Contract for the US Treasury Market**  
Daniel Aronoff and Robert Townsend  
*Working paper, MIT*
- 2022 **Coordination Problems, Leverage Constraints and Smart Contract Solutions for the Repo Market**  
Daniel Aronoff and Robert Townsend  
*Working paper, MIT*
- 2022 **NP+BRC: A Proof-of-Work Protocol Modification to Reduce Bitcoin Energy Consumption**  
Daniel Aronoff  
*Working Paper, MIT*
- 2020 **Double-Spend Counterattacks: Threat of Retaliation in Proof-of-Work Systems**  
Daniel Moroz, Daniel Aronoff, Neha Narula and David Parkes  
*ArXiv*  
<https://arxiv.org/abs/2002.10736>
- 2019 **Binance Bets the Farm**  
Daniel Aronoff  
*Medium*  
<https://medium.com/coinmonks/binance-bets-the-house-9a2d1a46af60>
- 2016 Book  
**The Financial Crisis Reconsidered: The Mercantilist Origin of Secular Stagnation and Boom-Bust Cycles**  
Daniel Aronoff.  
*Springer/Palgrave-Macmillan*  
<https://link.springer.com/book/10.1007/978-1-137-54789-7>
- 2015 Book  
**A Theorey of Accumulation and Secular Stagnation: A Malthusian Approach to Understanding a Contemporary Malaise**  
Daniel Aronoff.  
*Springer/Palgrave-Macmillan*  
<https://link.springer.com/book/10.1057/9781137562210>

Research experience

1989 - 1990 RA for the book **Sunk Cost and Market Structure: Price Competition, Advertising and the Evolution of Concentration**  
by John Sutton. Published by MIT Press.  
<https://mitpress.mit.edu/books/sunk-costs-and-market-structure>

## Teaching and study group experience

Fall term 2022 - Digital Finance Working Group  
Weekly research meeting of MIT Econ PhD students, MIT Media Lab Digital Currency Initiative computer scientists and Federal Reserve economists  
Position: Co- creator and organizer with Prof. Robert M. Townsend

Fall term 2021 - Central Bank Digital Currency Reading Group  
Spring term 2022 Bi-weekly research meeting of MIT Econ PhD students, MIT Media Lab Digital Currency Initiative computer scientists and Federal Reserve economists  
Position: Creator and organizer

Fall 2018 **Teaching assistant, The Challenge of World Poverty. MIT 14.73**  
Professors David Atkin and Esther Duflo

## Industry experience

April 2022 - **RCM Labs** Digital Currency Advisor  
Present

1994 - 2014 **Landon Companies** President  
Real estate investment and development in industrial, retail and residential. Environmental markets in wetland and endangered species offset credits

## Talks and tutorials

February 2024 **Conservation Priorities and Environmental Offsets: Markets for Florida Wetlands**  
Daniel Aronoff and Will Rafey  
*National Bureau of Economic Research Industrial Organization Program Meeting*, February 2024  
Will Rafey presenter  
<https://www.youtube.com/live/F-IycsWOZo?si=nPrxvEH0fY6sCda5>

- November 2024 **Fintech Innovation: The Nexus of Technology and Policy**  
MIT Research and Development Conference  
Daniel Aronoff and Ed Golding Discussants  
<https://ilp.mit.edu/watch/1115-1623-rd-fintech-innovation>
- November 2024 **Repo on chain and collateral mobilization**  
*Finadium: Rates and Repo North America*  
Panel Discussion  
<https://finadium.com/rates-repo-na-2023/repo-on-chain-and-collateral-mobilization/>
- July 2023 **Conservation Priorities and Environmental Offsets: Markets for Florida Wetlands**  
Daniel Aronoff and Will Rafey  
*National Bureau of Economic Research*  
Will Rafey presenter  
<https://www.nber.org/papers/w31495>
- May 2023 **Targeted Nakamoto: A Proof-of-Work Protocol Modification to Improve Security and Limit Energy Consumption**  
Daniel Aronoff  
*Presentation to Chanicode Labs Research Conference*  
<https://research.chaincode.com/research-seminar/>
- September 2022 **Conservation priorities and environmental offsets: Markets for Florida wetlands**  
Daniel Aronoff and Will Rafey  
*Presentation to the MIT Economics Industrial Organization Departmental Workshop*  
Daniel Aronoff presenter
- May 2022 **A Smart Contract for the US Treasury Market**  
Daniel Aronoff and Robert Townsend  
*Presentation to the MIT Media Lab Digital Currency Initiative and the Federal Reserve Bank of Boston Project Hamilton CBDC Team*  
Daniel Aronoff presenter
- March 2022 **A Proof of Work Protocol to Reduce Bitcoin Energy Consumption**  
Daniel Aronoff  
*Presentation to the MIT Media Lab Digital Currency Initiative*
- January 2022 Wholesale CBDC and Ledger UST in the Repo Market  
*Finadium Roundtable on CBDC and Repo*

- May 2021 **Rethinking Currency: CBDC in the Context of the Current US Monetary System**  
*Rethinking Economics NL Invited Lecture*  
<https://www.youtube.com/watch?v=wRamd3xaJ8>
- February 2021 **Coordination Problems, Leverage Constraints and A Smart Contract Implementation for the Repo Market**  
Daniel Aronoff and Robert Townsend  
*Presentation to the MIT Media Lab Digital Currency Initiative and the Federal Reserve Bank of Boston Project Hamilton CBDC Team*  
Daniel Aronoff presenter
- November 2019 **Double-Spend Counter-Attacks: Threat of Retaliation in Proof-of-Work Systems**  
Daniel Moroz, Daniel Aronoff, Neha Narula and David Parkes  
*Presentation to the University of Chicago, Becker-Friedman Institute: Cryptocurrencies and Blockchains Conference*  
Daniel Moroz presenter

## Volunteer positions

- 2003 - 2009 Grand Valley State University, Michigan USA  
*Member of the Board of Trustees. Vice-Chairman 2006-2008*
- 2007 - 2010 Roeper School, Bloomfield Hills MI  
*Member of the Board of Trustees*

## Technical skills

### Programming languages

Proficient in Python and Lisp (Scratch)

Familiar with: Julia, Gen (a Julia DSL for Probabilistic Modeling) and Pytorch

### Software

LaTeX

### Languages

English (fluent - occasionally)

## Other interests

My Family, Baseball, Shakespeare, Cross-fit, Coffee, Political Philosophy, Chinese history/culture/politics