

# Daniel Joseph Aronoff

Massachusetts Institute of Technology  
Research Affiliate, Department of Economics

Curriculum Vitae, Academics  
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## Academic Appointments

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**2024–**                    **Research Affiliate**, Department of Economics, MIT.  
**2022–**                    Research Associate, The Laboratory for Economic Analysis and Design at MIT.  
**2022–2024**            Research Scientist, MIT Media Lab.  
**2020–**                    Research Collaborator, Digital Currency Initiative, MIT Media Lab.

## Education

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**2022**                    **Massachusetts Institute of Technology**  
 Ph.D. in Economics  
 Advisors: Glenn Ellison, Robert Townsend and Nikhil Agarwal.  
**London School of Economics and Political Science**  
 B.Sc. in Philosophy and Economics (First Class Honors)  
 Tutors: Peter Urbach (Philosophy) and John Sutton (Economics).  
**University of Michigan**  
 Attended  
 Studied Russian Intellectual History  
 Advisor: Arthur Mendel.

## Research Interests

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Financial market structure; digital currencies; cryptography; environmental market design.

## Publications

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### Books and Chapters

Aronoff, D. and I. Ardis (2024). ADESS: A Proof-of-Work Protocol to Deter Double-Spend Attacks. *Advances in Information and Communication*. Ed. by K. Arai. Vol. 920. Lecture Notes in Networks and Systems. FICC 2024 Berlin. Cham: Springer, pp. 131–157. [Link](#) [PDF](#) .

Aronoff, D. (2016a). *A Theory of Accumulation and Secular Stagnation*. New York, NY: Palgrave Pivot. [Link](#) .

— (2016b). *The Financial Crisis Reconsidered: The Mercantilist Origin of Secular Stagnation and Boom-Bust Cycles*. New York, NY: Palgrave Macmillan New York. [Link](#) .

### Conference Proceedings

Aronoff, D., A. Bhat, P. Chatzigiannis, M. Minaei, S. Raghuraman, R. M. Townsend, and N. X.-Y. Zhang (2025b). SoK: Fully-homomorphic encryption in smart contracts. Conference Poster. FHE.org2025 Sofia, Bulgaria. [Link](#) .

Aronoff, D. (2024a). ADESS: A Proof-of-Work Protocol to Deter Double-Spend Attacks. Conference slides. FICC2024 Berlin. [Link](#) .

### Industry Publications

Aronoff, D. J., F. Calabia, A. Brownworth, A. Samuel, and N. Narula (2026). The Hidden Plumbing of Stablecoins: Financial and Technological Risks in the GENIUS Act Era. MIT Media Lab Digital Currency Initiative research project sponsored by MITRE. [Link](#) .

Aronoff, D. (2023). *DeFi for the Securities Industry*. Finadium Research Report. [Link](#) .

Aronoff, D. and J. Galper (2022). Bank Stablecoins vs. Central Bank Digital Currencies for Capital Markets. Finadium Research Report. [Link](#).

### Working Papers / Preprints

Aronoff, D. and M. Virza (2026). A Synthetic Repo Contract. MIT working paper.

Aronoff, D. (2025a). Mechanism Design for Hashrate Externalities: Implementing Optimal Security in Proof-of-Work. unpublished manuscript MIT. [Link](#).

Aronoff, D., A. Bhat, P. Chatzigiannis, M. Minaei, S. Raghuraman, R. M. Townsend, and N. X.-Y. Zhang (2025a). SoK: Fully-homomorphic encryption in smart contracts. Cryptology ePrint Archive, Paper 2025/527. Accepted paper: FC26 Decentralized Finance (DeFi) Workshop, in association with Financial Cryptography. [Link](#).

Aronoff, D. and R. M. Townsend (2025). A Smart-Contract to Resolve Multiple Equilibrium in an Intermediated Repo Trade. arXiv preprint. [Link](#).

Aronoff, D., R. M. Townsend, and M. Virza (2025). TradeMech: Multilateral Netting Without Altering Counterparty Risk. unpublished manuscript, MIT.

Aronoff, D. J., R. M. Townsend, and M. Virza (2025). *RepoMech: A Method to Reduce the Balance-Sheet Impact of Repo Intermediation*. [Link](#).

Aronoff, D. (2024d). Targeted Nakamoto: A Bitcoin Protocol to Balance Network Security and Carbon Emissions. arXiv preprint, version 4. [Link](#).

Aronoff, D. and W. Rafey (2023). Conservation Priorities and Environmental Offsets: Markets for Florida Wetlands. NBER Working Paper. Forthcoming in The American Economic Review. [Link](#).

Moroz, D. J., D. J. Aronoff, N. Narula, and D. C. Parkes (2020). Double-Spend Counterattacks: Threat of Retaliation in Proof-of-Work Systems. arXiv preprint. [Link](#).

### Thesis

Aronoff, D. (2022). “Essays on Incentive Designs to Improve Market Performance”. PhD thesis; available from MIT DSpace. PhD thesis. Cambridge, MA, USA: Massachusetts Institute of Technology. [Link](#).

### Recorded Talks and Video Presentations

Daniel Aronoff and Madars Virza (Oct. 2025). *AI-Driven, Post-Quantum Data Privacy Research Spotlight*. Presentation at MIT-ILP conference Securing the Future: AI-Driven Post-Quantum Data Privacy. [Link](#).

Aronoff, D. (June 2024b). *Incorporating Cryptographic Methods in Economics*. Presentation MIT-ILP NextGen Security Conference. [Link](#).

Aronoff, D., J. Flynn, and E. Golding (Nov. 2023). *R&D Fintech Innovation*. Panel Discussion at 2023 MIT Research and Development Conference. [Link](#).

Aronoff, D. (Sept. 2021b). *Rethinking Currency with Daniel Aronoff*. Invited Lecture: Rethinking Economics NL. [Link](#).

### Slide Presentations

Aronoff, D. (Oct. 2024c). SCBX Cryptography Use Cases: Credit Score Averaging with Differential Privacy and FHE. Presentation to SCB<sup>x</sup> R&D Department. [Link](#).

— (2021a). A Causal Inference Algorithm for Heterogeneous Treatment Effects. Presentation to MIT Econometrics Lunch. [Link](#).

### Blog Posts

Aronoff, D., A. Brownworth, J. Jin, A. Samuel, and N. Narula (July 2025). *Stablecoins and the Limits of Existing Analogies*. MIT Media Lab Digital Currency Initiative. [Link](#).

Aronoff, D., A. Brownworth, A. Samuel, and N. Narula (July 2025). *The GENIUS Act is Now Law. What's Missing?* MIT Media Lab Digital Currency Initiative. [Link](#).

Aronoff, D., A. Samuel, and N. Narula (July 2025a). *1:1 Redemptions for Some, Not All*. MIT Media Lab Digital Currency Initiative. [Link](#).

Aronoff, D., A. Samuel, and N. Narula (July 2025b). *Will Stablecoins Impact the US Treasury Market?* MIT Media Lab Digital Currency Initiative. [Link](#).

### Project Sites

Aronoff, D. (July 2025b). *Targeted Nakamoto: Project site*. MIT Media Lab Digital Currency Initiative. [Link](#).

Aronoff, D. and I. Ardis (July 2025). *ADESS: Project site*. MIT Media Lab Digital Currency Initiative. [Link](#).

### Professional Service

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**Committees**            2022: **Advances in Financial Technologies (AFT2022)**  
Program Committee

**Refereeing**            2020 - 2023: *Cryptoeconomic Systems*.

**Academic Boards**    2003 - 2008: **Grand Valley State University** Grand Rapids, MI.  
Board of Trustees.  
2006 – 2008: Vice-Chair.  
2007 - 2010: **Roeper School** Bloomfield Hills, MI.  
Board of Trustees

### Consulting

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**2024–**                    Client: SCB<sup>X</sup>. Project: An AI-Driven Post-Quantum Cryptographically Secure  
Workflow for Collaborative Credit Scoring.

### References

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Available upon request.