Harry Altman

20 John St., Fl. 4.
New York, NY 10038

201-286-5837
harry.j.altman@gmail.com
https://hjaltman.github.io/
https://github.com/haltman-at/

Professional Experience

- **Truffle Blockchain Group (ConsenSys)** — New York, NY
  Senior Software Engineer – Protocol — *2018 – 2023*
  - Owned development and maintenance of Truffle's Solidity debugger and encoding/decoding library
  - Coordinated with developers of Solidity to ensure tooling compatibility of future language versions
  - Enhanced Truffle's testing framework with expanded stacktrace information and improved decoding
  - Developed complex features in response to user feedback (e.g.: automatic external source fetcher; signature-directory-based decoding; Yul debugging)
  - Authored "Data Representation in Solidity", a widely-read paper detailing Solidity data encoding
  - Presented current development efforts and future directions at Solidity Language Summit
  - Received recognition within company for fast bug-report-to-fix turnaround time
- **Epic Systems Corporation** — Verona, WI
  Software Developer — *March 2016 - October 2016*
  - Migrated Visual Basic code to a web-based and Caché-based system
  - Analyazed usage data to guide future development

Selected Publications and Talks

- H. Altman, Zeckendorf Trees and Binary Trees, 21st International Fibonacci Conference, Claremont, CA, July 8–12, 2024
- H. Altman, Bounding Finite-Image Strings of Length ω^k, `arXiv:2409.03199`, 2024 (preprint)
- H. Altman, Tracking Mapping Keys with the Truffle Debugger, Solidity Language Summit, April 29–30, 2020
- H. Altman and G. N. D'Andrea, Towards Better Debugging: Data Format Design Session, Devcon V, Osaka, Japan, October 8–11, 2019
- H. Altman, Data Representation in Solidity, `https://ethdebug.github.io/solidity-data-representation/`, 2018
- H. Altman, Integer Complexity: Algorithms and Computational Results, *Integers* **18** (2018), #A45.
- H. Altman, Integer Complexity: Representing Numbers of Bounded Defect, *Theoretical Computer Science* **652** (2016), 64–85.

Skills

- Programming languages: JavaScript, TypeScript, C, Haskell, Solidity, C#, M
- Frameworks: Redux, Reselect, Redux-Saga
- Epic software certifications: Fundamentals of .NET/C#; Chronicles Database Server programming

Projects

- A fast algorithm for computing integer complexity of powers of 2 (Haskell)
  - Computed complexity of 2^{48} in two days (previous record: 2^{39} in three weeks)

Education

- **University of Michigan** — Ann Arbor, MI
  Ph.D., mathematics; Jeffrey Lagarias advising — *2009 - 2014*
- **University of Chicago** — Chicago, IL
  B.S., honors, mathematics — *2005 - 2009*

Awards and Achievements

- Completed *Microcorruption* embedded security capture-the-flag — 2018
- Honorable mention (top 74 out of 3753), William Lowell Putnam Mathematical Competition — 2007