Dan Cline

Software Engineer

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github.com/rjected

education

University of Massachusetts, Amherst

Bachelor of Science in Computer Science and Math

September 2017 - May 2021

Amherst, MA

skills

• Go • Rust • C++ • TypeScript • Elixir • OCaml • Solidity • Scala • LaTeX • C • Lisp • Perl • Haskell • Python • Git • C# • Shell • Linux • .NET

awards

- Binance DEXathon Winner
  - Global Competition
  - Won total of **$50,000**
- MIT Bitcoin Hackathon: City of Zion Prize ($5,000)
- HackUMass V: Grand Prize
- HackUMass V: Finalist for Lutron Sponsor Prize
- YHack: Viacom Best use of DataPoint API
- YHack: JP Morgan Finance of the Future Prize
- Eagle Scout

leadership

HackUMass | Logistics Director

- Orchestrate all logistics for HackUMass, UMass's annual hackathon with an average attendance of 1000 people.
- Manage team members and volunteers for event logistics.

UMass ACM | Chapter President

- Oversee all major functions of the UMass ACM Student Chapter.
- Managing leadership of interest groups.

experience

MIT Digital Currency Initiative | Undergraduate Researcher Cambridge, MA
January 2019 - July 2019 (Present)

- Working on layer 2 technologies such as the Bitcoin Lightning Network and hash time lock contracts (HTLCs) to implement decentralized exchange technology
- Working with Tadge Dryja and Neha Narula to research exchange technology and discover ways of using distributed algorithms and cryptography to decrease trust needed in cryptocurrency and securities exchanges.

Charles River Analytics | Software Engineer Intern Cambridge, MA
June 2018 - August 2018

- Created framework to score causal analysis algorithms for time series analysis in Python.
- Implemented various statistical analysis methods to detect causality in time series data with Granger, Pearson, and Convergent Cross Mapping tests.
- Demonstrated an increase in precision and recall for detecting causal effects in sets of arbitrary time series data.

Funkitron | Software Engineer Intern Cambridge, MA
May 2017 - June 2017

- Created an online, player-versus-player version of Funkitron's Cascade, a candy crush-like matching game where players match certain tiles to try to defeat their opponents.
- Implemented serialization and deserialization for game events and messages.

projects

OpenCX | Open-source project - Author

- Author of OpenCX, the first open-source toolkit for building asset exchanges.
- Developed state of the art features for non-custodial trading, privacy-preserving proofs of solvency, verifiable delay functions, and complete public verifiability of exchange behavior.
- Designed and implemented a novel front-running resistant and non-custodial exchange protocol using tools from OpenCX.

Lit | Open-source project - Contributor

- Contributor to lit, a Lightning Network node implementation compatible with multiple cryptocurrencies, including Bitcoin, Litecoin, and Vertcoin.
- Implemented event bus system and other improvements to the software in an effort to make it more interoperable with other software.

Binance DEX | Open-source project - co-author

- Modified the Bitcoin codebase to implement asset creation, limit GTC order creation, and delegate voting on the blockchain.
- Designed and implemented the **first ever** Delegated Proof of Stake consensus algorithm that works with the UTXO Model.
- Won **$50,000** for DEX implementation. Technical report and design rationale can be read at dancline.net/binance.