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 - September 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 on an academic paper on using distributed systems and cryptographic protocols to decrease trust needed in cryptocurrency and securities exchanges.
- Designing algorithms to mitigate the front-running problem 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 increase software interoperability.

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.