# **Project Brainstorming**

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CS554: Data-Intensive Computing February 9th, 2023

#### **Upcoming Seminars**

- 02/09/23 SB111@12:45pm
  - Context-aware Responsible Data Science
- 02/10/23 Zoom@12:45pm
  - Text Simplification: Methods and Evaluation
- 02/14/23 SB111@12:45pm
  - Scalable Graph Algorithms: Parallel,
    Dynamic, and Private
- 02/16/23 SB111@12:45pm
  - Virtual reality (VR) devices mediate between a virtual world and a user

## Logistics

- Proposal writeup, due February 20<sup>th</sup>
  - Submit via BB
- Testbeds:
  - Mystic: <a href="http://mystic.cs.iit.edu">http://mystic.cs.iit.edu</a>
  - Chameleon: <a href="https://chameleoncloud.org">https://chameleoncloud.org</a>

### Project Ideas

- DATASET: Fine-grained Crypto Dataset
  Publishing (<u>Binance.us</u> 100+ coins since 2017)
- PREDICT: Time-series Prediction (deep learning vs <u>statistics</u>, multivariate data input)
- HASH: Cryptographic Hashing Algorithms (SHA256, <u>BLAKE3</u>, etc)

## Logistics

- Proposal writeup, due March 1<sup>st</sup> (new deadline)
  - Submit via BB

#### **Upcoming Seminars**

- 02/21/23 SB111@12:45pm
  - Data Acquisition for AI on Lakes of Data
- 02/23/23 SB111@12:45pm
  - Kaixiong Zhou
- 02/28/23 Zoom@12:45pm
  - A principled approach to privacy design
- 03/06/23 SB111@12:45pm
  - Kaixiong Zhou

### Project Ideas

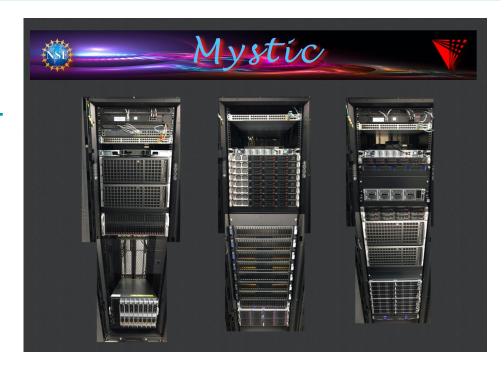
- POWER: Decentralized Power-Efficient Consensus Algorithms (Proof of Space vs. Proof of Work vs. Proof of Stake)
- SHARDING: Achieving 1K~1M transactions per second through block sharding (among other techniques)
- CHIA: Performance profiling of Chia Blockchain
- SIMULATE: Explore block propagation techniques at large scales through simulations

## Code Repositories

- Bamboo: <a href="https://github.com/pandanite-crypto/pandanite">https://github.com/pandanite-crypto/pandanite</a>
- Litecoin (LTC): <a href="https://github.com/litecoin-project/litecoin">https://github.com/litecoin-project/litecoin</a>
- Chia blockchain: <a href="https://github.com/Chia-Network/chia-blockchain">https://github.com/Chia-Network/chia-blockchain</a>
- Other useful repositories:
  - Bitcoin (BTC): <a href="https://github.com/bitcoin/bitcoi
  - Ethereum (ETH): <a href="https://github.com/ethereum/go-ethereum">https://github.com/ethereum/go-ethereum</a>
  - Blake3: <a href="https://github.com/BLAKE3-team/BLAKE3">https://github.com/BLAKE3-team/BLAKE3</a>
  - SHA256: <a href="https://www.movable-type.co.uk/scripts/sha256.html">https://www.movable-type.co.uk/scripts/sha256.html</a>

#### Testbeds

- Mystic
  - <u>http://mystic.cs.iit.edu</u>



- Chameleon
  - https://www.chameleoncloud.org

