

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 20th
 - Submit via BB
- Testbeds:
 - Mystic: <http://mystic.cs.iit.edu>
 - Chameleon: <https://chameleoncloud.org>

Project Ideas

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

Logistics

- Proposal writeup, due March 1st (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:** <https://github.com/pandante-crypto/pandante>
- Litecoin (LTC): <https://github.com/litecoin-project/litecoin>
- Chia blockchain: <https://github.com/Chia-Network/chia-blockchain>
- Other useful repositories:
 - Bitcoin (BTC): <https://github.com/bitcoin/bitcoin>
 - Ethereum (ETH): <https://github.com/ethereum/go-ethereum>
 - Blake3: <https://github.com/BLAKE3-team/BLAKE3>
 - SHA256: <https://www.movable-type.co.uk/scripts/sha256.html>

Testbeds

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