Chongdan Pan

pandapcd@umich.edu • 734-934-4277 • Ann Arbor, MI
www.linkedin.com/in/pcdpanda/

EDUCATION

University of Michigan Ann Arbor, MI
Master of Science in Information (GPA: 4/4) *Apr 2023*
Courses: NLP, Data Mining, Time Series Analysis, Database, Front-end Dev

University of Michigan - Shanghai Jiao Tong University Joint Institute Shanghai, China
Bachelor of Science in Electrical and Computer Engineering; Minor in Entrepreneurship *Aug 2020*
Courses: Algorithm, Operating System, Computer Network, Convex Optimization, Machine Learning

SKILLS

Programming: C/C++, Python, Shell, SQL, Scala, Git, Solidity, Rust, JavaScript, TypeScript
Third-party tools: Redis, MongoDB, Hadoop, Alluxio, Spark, Kafka, RabbitMQ, Tableau, Clickhouse
Framework/Library: Hadoop, Numpy, Hadoop, Spark, Alluxio, Pytorch, Kafka, RabbitMQ, Django, Hardhat, Anchor

PROFESSIONAL EXPERIENCE

Solana Lab Ann Arbor, Michigan
Web3 Developer Intern *June 2022 - Aug 2022*
- Led a team to design and built a NFT marketplace with Solana Metaplex API in Rust and TypeScript
- Did NFT economy model research to realize NFT unique features with Solana smart contracts.

Jump Trading Chicago, Illinois
Software Engineer Intern *June 2022 - Aug 2022*
- Implemented asynchronous data scanner of the network file system and reduced the latency by three times.
- Built user-friendly and high performance Python library to fetch global markets' bar data.
- Developed multidimensional data manipulation and calculation tools for quantitative researchers.

Probquant Investment Shanghai, China
Full-time Software Engineer *Aug 2020 - Aug 2021*
- Used lock-free queue and multithreading to develop a cache-friendly asynchronous logger to reduce the backtest and execution latency of high-frequency trading strategies.
- Used Protobuf, ZeroMQ, and RabbitMQ to develop a real-time data exchange and strategy monitoring system between colocated servers.
- Built the firm-wide market data warehouse from scratch, enabling quantitative researchers to fetch and save high-frequency trading data with a throughput higher than 10GB/s.
- Utilized shared memory to build a stand-alone in-memory key-value database customized for large data matrix, providing 10x higher performance than Redis.
- Deployed and tested a distributed RDMA cluster interconnected by InfiniBand.

RESEARCH

Political Misinformation Detection *Feb 2022 - Sep 2022*
- Built a pipeline to scrap and political fack check articles and fetch related suspicious tweets.
- Applied network and graph methods to detect suspicious misinformation spreaders on Twitter.
- Used NLP and time series peak method to provide signals for the mass spreading of misinformation.

Entrepreneurship Research on Telepresence Robot *Apr 2021 - Aug 2020*
- Analyzed the telepresence robot's role in Covid-19 based on experiments and literature and built a remote care robot prototype with functions including free movement, medicine dispensation, and vital monitoring.
- Published a paper *Technology Entrepreneurship in Developing Countries: Role of Telepresence Robots in Healthcare* in *IEEE Engineering Management Review*
- Did a systematic review on the application of telepresence robots and published a paper (preprint) *Telepresence Robots to Support Telehealth during Pandemic* in *Digital Medicine*
- Authored a book chapter in the IET Book *Digital Methods and Tools for Healthy Ageing*
- Led a team of 5 members to beat competitors from all over the University and won the champion of *UM-SJTU JI Covid-19 Entrepreneur Challenge.*

Blockchain-based Peer Review System *Feb 2022 - April 2022*

- Used Solidity to develop an Ethereum-based decentralized application with smart contracts to record the historical behavior of the reviewee for customers' reference.
- Authored a book chapter in *Technology Innovations for Disaster Management* to be published by *World Scientific Publishers* based on the idea of using Blockchain to prevent healthcare disasters.
- Led an interdisciplinary team of engineers, designers, and analysts to build the front-end and back-end of the project and got into the finalist of Umich Ross Crypto Fintech Challenge.

PROJECT EXPERIENCE

Crypto Market Making *May 2021 - present*

- Built market data publisher, fair value calculator, and gateways for multiple crypto exchanges to catch arbitrage opportunities.
- Used Xetra Liquidity Measure and spread analysis to improve the execution of market maker strategy.
- Developed hedge strategy to manage the risk of market making.

Crypto Quantitive Research *May 2021 - present*

- Used Word2Vec and LSTM on tweets data to generate meaningful predictors for crypto trading strategies.
- Built a data pipeline to fetch, clean, normalize and store median-frequency blockchain market and text data from Binance and Twitter Rest API.
- Developed backtest system to test the performance of predictors for Barra models parallelly.
- Applied Garch-AR, Bretó Stochastic model to analyze the volatility of crypto market time series data.

Relic NFT *May 2022 - present*

- Working with UMich to provide NFT tickets for the match associated with the university sports team.
- Used Hardhat, Solidity and Javascript to develop an NFT marketplace supported for trades and standard functions for ERC-721 tokens.
- Set up and maintained a forked Ethereum blockchain in our virtual environment to test and run the Dapp.