

Chongdan Pan

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EDUCATION

University of Michigan Ann Arbor, MI

Master of Science in Information (GPA: 4/4) Apr 2023

Relevant Courses: Natural Language Processing, Timeseries Analysis, Full-stack Software Design, Finance Engineering

University of Michigan - Shanghai Jiao Tong University Joint Institute Shanghai, China

Bachelor of Science in Electrical and Computer Engineering; Minor in Entrepreneurship Aug 2020

Relevant Courses: Algorithms, Operating Systems, 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: Numpy, Spark, Alluxio, Pytorch, Kafka, RabbitMQ, Django, Hardhat, Anchor

PROFESSIONAL EXPERIENCE

D. E. Shaw & Co. New York, New York

Software Developer Aug 2023 - present

- Build software and tools to provide fast access to tools and data for discretionary tradings.
- Run analysis and generate reports for market data and trading portfolio.
- Develop financial models to price sophisticated financial derivatives.

Solana Lab Ann Arbor, Michigan

Web3 Developer Intern June 2022 - Aug 2022

- Led a team to design and build an 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

Software Engineer Aug 2020 - Aug 2021

- Used lock-free queue and message broker to develop a real-time data exchange and strategy monitoring system.
- Built the firm-wide market data warehouse for high-frequency trading data with a throughput higher than 10GB/s.
- Utilized shared memory to build a stand-alone in-memory key-value database with state-of-art performance.

RESEARCH

Political Misinformation Detection Feb 2022 - Sep 2022

- Built a pipeline to collect political fact-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 *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 *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 - Apr 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 *Blockchain Technology for Preventing Disasters in Surgery: A Case Study on Plastic Surgery in Technology Innovation for Sustainable Development of Healthcare and Disaster Management* to be published by *Springer* based on the idea of using Blockchain to prevent healthcare disasters.
- Led an interdisciplinary team of engineers, designers, and analysts to build an MVP for the project and won 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 Quantitative Research

May 2021 - Apr 2023

- 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 a 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 - Apr 2023

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

VEX Robotic Competition

Apr 2018 - Aug 2021

- Applied 3D printing, CAD design, control theory, computer vision, and C++ to build competitive robots.
- Led SJTU robotic competition team to participate in the VEX Robotic championships globally.
- Won the Skill-challenge World Champion and Division Champion in 2019 VEX World Championship.
- Won the Tournament Champion, Excellence Award and ASUS Future Star in 2019 VEX Asia-open Tournament and 2018 VEX Asia-Pacific Championship. Interviewed by *China Daily*.