# Cyrus Jia

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## Education

**University of Southern California - Viterbi School of Engineering**      **Los Angeles, CA**
***Bachelor of Science in Computer Science***      *Dec 2016*

Selected Coursework: *Discrete Math, Data Structures and OO Design, Algorithms/Theory of Computing, Computer Networks, Software Design, Mobile Application Development, Artificial Intelligence, Software Engineering, Operating Systems*

***Bachelor of Science in Electrical Engineering***      *May 2016*

Selected Coursework: *Probability, Linear Algebra, Ordinary/Partial Differential Equations, Wireless Communication Technology, Electro-Magnetics, Electronic Circuits, Linear Circuits, Communication Systems*

**Skill/Languages:** Java, Python, SQL, C++, C, Obj-C, NodeJS, Matlab, HTML/PHP

## Professional Experience

**Bridgewater Associates**      **Westport, Connecticut**
*Engineer - Trade Generation and Portfolio Construction Team ($150+ bln AUM)*      *June 2018-September 2019*
- Software engineering of trade pipeline logic, ETL tools in C#/SSIS, SQL stored procedure logic, high level business logic, codified infrastructure in Ruby using Chef and in-house frameworks (deploy AWS instances and software through code)
- Communicated with business stakeholders to get project requirements + design. Used SDLC and project management framework
- Wrote Evolutionary Genetic Algorithm from scratch in Python to create a platform for solving the scheduling problem (NP-hard)
- Operational incident/process/risk management of software, systems, and business logic. New hire training and development

**IBM Bay Area Laboratory**      **Silicon Valley, CA**
*Watson Software Engineer*      *April 2017-April 2018*
- Designed and developed Proof of Concept for Video conferencing live speech to text transcription with Zoom using Watson Conversation (NLP API), and NodeJS Microservices
- Designed and developed Proof of Concept for Zoom video integration product integration into Watson Workspace using Node, C, and Cassandra
- Created Node chatbots using Watson Conversation (NLP api) through a Node express server, Webhooks, and GraphQL calls

**IBM T.J. Watson Research Center**      **Yorktown Heights, NY**
*Software Engineering and Research Intern*      *May 2016-July 2016*
- Executed an end-to-end project of generating visitor metrics of any location in the US (e.g. Given a Louis Vuitton in Beverly Hills, what's the distribution of income/ethnicity/gender/age/etc of the visitors of that store)
- Transformed and analyzed geographical and census datasets and inserted into an ElasticSearch Database, for geo-polygon queries
- Designed a 3D Gaussian integration library in Python and wrote a Geo-Hashing Algorithm

## Project Experience

**ReRo** | NodeJS, Swift, SQL      **Summer 2019-Present**
- A social platform that connects local businesses with their communities by allowing friends to recommend their favorite spots.
- Worked on Product design and development, timeline and product roadmap, User storyboarding and UX/UI, technical design, business and revenue models, technical implementation design, and competition research.
- Designed and wrote backend NodeJS REST API using four layered stateless architecture with scalability and reliability in mind.
- Designed SQL databases, created website (rexxiapp.com), and setup AWS hosting and config.

**Algorithmic Trading** | Python      **Spring 2019-Present**
- Created lagged cross-correlation finder in Python for companies in S&P500 to find k-day delays in asset pricing
- Used BackTrader to backtest and assess potential strategies' alphas based on sharpe/sortino ratio among other metrics
- Used TiingoAPI and pickleDB to pull, manage, and store equity pricing in a Securities Master

**Arbitrage Trading Bot** | Python      *Winter 2017*
- Used triangular arbitrage to detect trading opportunities on Binance, a top cryptocurrency exchange
- Bid/Ask Orderbook analysis to find threeway currency price discrepancies and output profitable trades

**Deep Reinforcement Learning for Cadaveric Hands** | Python      *Fall 2016*
- Fitted cadaveric hand muscle tension data into a machine learning neural network written in TensorFlow to predict force output
- Contributed to RandOpt, python library for optimizing Neural Network hyper-parameters

**Twitter Engine** | C++      *Summer 2015*
- 5,000 lines of code, QT-based Twitter program with login functionality, following/followers list, tweets, and mentions
- Features: Hash function for password database, merge sort for sorting tweets, Tarjan's algorithm for finding strongly connected nodes (users), heap tree for tweet popularity sorting, and database search