Mark Bryan

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Education

Cornell University, College of Engineering · B.S., Computer Science *Ithaca, NY May 2018*

Dyson Business Minor for Engineers. College of Engineering Dean's List Fall 2014, Fall 2016, Spring 2017, Fall 2017, Spring 2018

Experience

Broadway Technology · *Senior Software Consultant* *New York, NY July 2018 – Present*

- Designing, building, and deploying mission-critical fintech solutions to satisfy complex client requirements.
- Implemented feature enhancements and bug fixes in client's US Treasury matching engine service. Added support for Immediate-Or-Cancel orders in Python-based matching engine component and Broadway's C++ order management component.
- Collaborated with clients to build custom backend services APIs for business workflows. Implemented loan management service for crypto client to offer loans to customers, providing a clean API to manage the lifecycle of a client's loan request and collateral requirements required to take out the loan. Designed and implemented margin trading offering for cryptocurrency client to allow customers to trade on margin, including design of robust risk controls and risk monitoring.
- Implemented features and bug fixes in market connectors written in Python and C++, which connect to an external exchange's API to subscribe and publish market data and manage orders placed on the exchange.

Yelp · *Software Engineer Intern* *San Francisco, CA May 2017 – Aug 2017*

- Improved data documentation service and data warehouse reporting as a member of Yelp's Consumer Analytics and Metrics team.
- Developed backend infrastructure for collecting, cleaning, and analyzing usage data for Yelp's data warehouse and implemented frontend visualizations in React to convey information to data warehouse administrators.
- Provided insight into how Yelp engineers query the data warehouse, guiding decisions to improve system performance.

Cornell Database Group · *Research Assistant* *Ithaca, NY Jan 2017 – May 2018*

- Researched optimization problem of how to efficiently represent relational data through audio interfaces by applying data mining algorithms to translate data into natural language speech. Collaborated with Professor Immanuel Trummer to develop a database system funded by a Google Faculty Research Award.
- Implemented and refined exhaustive and polynomial time approximation algorithms that translate datasets into speech output in a prototype system written in Java. These algorithms minimize speaking time subject to user-defined precision constraints.

Cornell University Computer Science Dept. · *Teaching Assistant, Database Systems* *Ithaca, NY Aug 2016 – Dec 2018*

- Conducted weekly office hours, updated problem sets and solutions, and graded student work for Database Systems course.

Toast · *Software Engineer Intern* *Boston, MA Jun 2016 – Aug 2016*

- Improved database layer of Toast's core web application by refactoring the way developers write and release changes to data sources, increasing the reliability of deploying database schema migrations in both development and production environments and improving the efficiency of the engineering team.
- Presented new development workflow to engineering team and developed tooling and documentation to facilitate the adoption of the new schema migration process.

Publications, Presentations, and Awards

Immanuel Trummer, **Mark Bryan**, Ramya Narasimha. "Vocalizing Large Time Series Efficiently." PVLDB Volume 11, No. 11, July 2018.

- Paper available at https://www.vldb.org/pvldb/vol11/p1563-trummer.pdf
- Honorable mention for Computing Research Association's 2018 Outstanding Undergraduate Researcher Award.
- Received JP Morgan Award at BOOM 2018, Cornell's annual showcase of student research in digital technology.

Immanuel Trummer, Jiancheng Zhu, **Mark Bryan**. "Data Vocalization: Optimizing Voice Output of Relational Data." PVLDB Volume 10, No. 11, August 2017.

- Paper available at https://www.vldb.org/pvldb/vol10/p1574-trummer.pdf
- Presented research at the September 2017 VLDB Conference in Munich, Germany.
- Received Lockheed Martin Award at BOOM 2017, Cornell's annual showcase of student research in digital technology.

Projects

Podcast Client · *iOS Developer* *Ithaca, NY Aug 2016 – Aug 2017*

- Contributed to a podcast player application written in Swift as a member of the Cornell App Development project team.
- Built audio player infrastructure and user interface for audio playback.

Tempo – Discover New Sounds · *iOS Developer* *Ithaca, NY Aug 2015 – Aug 2016*

- Contributed to iOS application written in Swift that provides a unique way to share and discover music with friends.

Programming Skills and Technologies

Java · Python · C++ · SQL · Linux · Windows · JavaScript · React

Interests

Guitar · Cold-brewed coffee · *The Office* · St. Bernard dogs