

# Mark Bryan

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## Education

**Cornell University, College of Engineering** · B.S., Computer Science

Ithaca, NY May 2018

Honors: College of Engineering Dean's List fall 2014, fall 2016, spring 2017 · Dyson Business Minor for Engineers

## Experience

**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 to describe and convey information to data warehouse administrators.
- Provided insight into how Yelp engineers query the data warehouse, guiding decisions to improve the performance of the data warehouse system.
- Investigated methods to document data transformations in Yelp's data pipeline and contributed to planning meetings to improve the data pipeline infrastructure.
- Redesigned React user interface for data documentation service in order to improve developer workflow.
- Collaborated with engineers from a variety of teams in order to accomplish project goals.

**Cornell Database Group, Data Vocalization Project** · Research Assistant

Ithaca, NY Jan 2017 – Present

- Research optimization problem of how to efficiently represent relational data through audio interfaces by translating data into natural language speech.
- Collaborate with Professor Immanuel Trummer to develop experimental database system funded by a Google Faculty Research Award.
- Develop methods for translating large datasets and time series data into natural language summarizations.
- Implemented and refined exhaustive and polynomial time approximation algorithms that translate datasets into speech output. These algorithms minimize speaking time subject to user-defined precision constraints.

**Cornell University** · Teaching Assistant, Database Systems

Ithaca, NY Aug 2016 – Present

- Conduct weekly office hours, create and update problem sets and solutions, and grade problem sets for Database Systems course.
- Develop automated grading scripts used by team of 20 teaching assistants to optimize grading processes.

**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 40+ member engineering team and developed tooling and documentation to facilitate the transition to the new schema migration process.

## Publications, Presentations, & Awards

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

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

## Projects

**Podcasts** · iOS Developer

Ithaca, NY Aug 2016 – Aug 2017

- Contributed to a podcast player application as a member of the Cornell App Development project team.
- Built audio player infrastructure and user interface for audio playback.
- Code available at <https://github.com/cuappdev/podcast-ios>

**Tempo – Discover New Sounds** · iOS Developer

Ithaca, NY Aug 2015 – Aug 2016

- Contributed to iOS application that provides a unique way to share and discover music with friends.
- Available on the App Store at <https://itunes.apple.com/us/app/tempo-discover-new-sounds/id1158693533>
- Code available at <https://github.com/cuappdev/tempo>

## Programming Skills and Technologies

Java · Python · SQL · Swift · Linux · Amazon Redshift · JavaScript · React · CPLEX Linear Programming · C

## Community Service

**Cornell University** · Engineering Peer Advisor

Ithaca, NY Aug 2016 – Dec 2016

Organized and presented at weekly meetings to introduce new engineering students to College of Engineering resources.

**Learn To Be** · Tutor

Ithaca, NY Aug 2014 – Feb 2015

Volunteered on a weekly basis as a tutor through Learn To Be, a national online tutoring organization that empowers disadvantaged students to succeed academically through forming mentoring relationships with college tutors.

## Other Information

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