

# Charles Threlkeld

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charles-threlkeld.github.io

## EDUCATION

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- **Tufts University**, M.S., PhD Candidate 2018–Present  
*Computer Science, Cognitive Science*
- **Indiana University**, B.A., B.S 2007–2010  
*Philosophy, Economics, Mathematics*

## PROFESSIONAL EXPERIENCE

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**Tufts University**, Medford, MA January 2018–Present  
**Research Assistant**

- Created unsupervised learning model of speech acts to build speech act theory based on local conversation context.
- Collated data disparate data sources to a single, reusable format for research use, resulting in five published papers.
- Modeled statistical properties of conversation to empirically distinguish between competing theories of cognition, turn-taking, and speech structure.
- Annotated corpus of natural conversation, resulting in falsification of a long-standing linguistic hypothesis.
- Created modern, cross-platform conversation annotation software to replace the state-of-the-art which has been deprecated.
- Managed undergraduate writing tools to make conversation annotation software interoperable with phonetic annotation software.
- Supervised undergraduate data acquisition and modeling, resulting in her honors thesis critiquing experimental results applied to natural language.
- Engineered robot dialogue component to interoperate with physical action reasoning.

**Tufts University**, Medford, MA January 2018–Present  
**Teaching Assistant**

- Created course content for online and in-person classes, including assignments, quizzes, and final projects for nearly 100 students over three semesters.
- Managed several other teaching assistants to improve workflow between professor, teaching assistants, and students.
- Presented lecture series on Bayesian modelling to introduce students to the concepts and teach them state-of-the-art techniques.
- Introduced dozens students to rigorous mathematical notation necessary for presenting their ideas unambiguously.
- Provided timely and robust feedback to students for up to weekly assignments.

**Tufts University**, Medford, MA  
**Emerging Scholars Program PhD Coordinator**

September 2020–May 2022

- Created recruitment and informational content to attract over 150 students to the program in its initial four semesters.
- Iterated content for students as we learned what piqued the interest of first years.
- Focused content toward the research strengths of the university in order to steer students toward fruitful relationships with their professors.
- Recruited and managed the rest of the team who delivered the content to the students.

**Rosenthal Collins Group, LLC**, Chicago, IL  
**Risk Analyst**

Oct 2010 - Apr 2017

- Produced ongoing long-term study of the options markets with respect to the futures price, finding that the strike prices exerted pressure on the underlying, enabling an edge in brokerage.
- Managed risk assessment of portfolios totalling over \$100M, detailing susceptibility to price and volatility changes using commercial software.
- Produced bespoke risk analyses for clients, detailing time, volatility, futures price, calendar, and inter-commodity spread risks.
- Developed in-house software for risk assessment, allowing assessments beyond what was available off-the-shelf, and saving the group over \$10,000 monthly in licensing costs.
- Created graphical snapshots of market or risk analyses that could be interpreted easily by clients and coworkers.

## PROJECTS

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- **Ironman™ Finisher Analysis:** Scrapes the Ironman™ website for finisher information in a series of races. Tidies the data, then analyzes to compare the relative difficulties of the races under study.
- **Ironman™ Heat Analysis:** Builds on the information in the Ironman™ Finisher Analysis by cross-referencing the historical weather data for the locations of the races. Then allows race-difficulty weighting by daily weather.
- **John Company:** Model the board game *John Company* (Sierra Madre Games 2017) in order to help the designer and developer more fully understand how changes to the random event probabilities affect the game state throughout the game play.

## SKILLS

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Basic Knowledge	HTML, CSS, Javascript
Intermediate Knowledge	Linux, Microsoft Windows, Ruby, ML, Clojure, git, SQL, L <sup>A</sup> T <sub>E</sub> X
Advanced Knowledge	Python, Data Science, R, Racket, Bayesian Data Analysis