

# Charles Threlkeld

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<https://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**

- Grammar of Conversation: a computational model using unsupervised machine learning to explore the heuristics people use to interpret pragmatic meaning from the local context of an utterance.
- Another Language ANalyzer (ALAN): Multi-media academic application for Jeffersonian transcription to create rich linguistic annotations.
- TRP Analysis: Bayesian analysis of turn-taking data to determine floor transfer sensitivity with respect to time in natural conversation. Published in SigDial 2022
- Utterance Length Analysis: Probabilistic analysis of utterance length at phonetic, morphemic, and lexical levels with respect to constant hazard rate distributions to determine likelihood of utterance completions. Published in SigDial 2022.
- Literal Force Hypothesis Testing: Corpus analysis of to determine the strength of the signal of sentence syntax with respect to speech act. Published in SemDial 2022.
- Data Intensive Studies Center Fellow: Awarded \$15,000 grant in order to pursue computational models of speech act detection.
- Indirect Speech Act Analysis: Bayesian analysis of direct and indirect speech acts in natural conversation with respect to response times to search for signs of Gricean cognitive reappraisal mechanisms. Published in XPrag 2022

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

- Algorithms, Spring 2023 with Diane Souvaine
- Explainable Artificial Intelligence, Spring 2021 with Daniel Kasenberg
- Computational Models in Cognitive Science, Fall 2022 with Professor JP de Ruiter
- Computational Models in Cognitive Science, Fall 2020 Co-teacher with Professor JP de Ruiter
- Computational Models in Cognitive Science, Fall 2021 Co-teacher with Professor JP de Ruiter
- Computation Theory, Spring 2020 with Professor Alexa Sharp
- Computation Theory, Summer 2021 with Professor Martin Allen

- Discrete Mathematics, Spring 2018: with Professor Laney Strange

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

Oct 2010 - Apr 2017

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- 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.
- 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.

## 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, Huge Poops