Organizational Communication and Computational Methods

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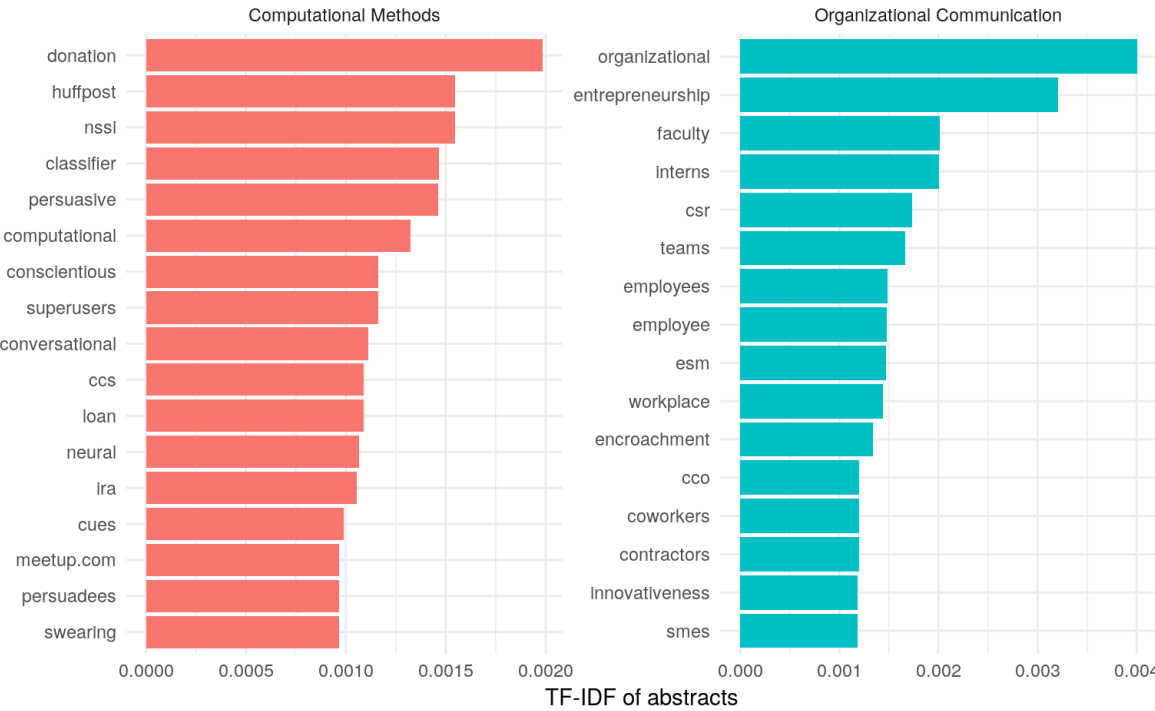

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Community
Data Science
Collective

wiki.communitydata.science

What is Organizational Communication?

A computational approach

Computational Methods

donation	
huffpost	
nssi	
classifier	
persuasive	
computational	
conscientious	
superusers	
conversational	
ccs	
loan	
neural	
ira	
cues	
meetup.com	
persuadees	
swearing	

Organizational Communication

organizational	
entrepreneurship	
faculty	
interns	
csr	
teams	
employees	
employee	
esm	
workplace	
encroachment	
cco	
coworkers	
contractors	
innovativeness	
smes	

TF-IDF of abstracts

Questions and Contexts

Questions

- How do people communicate in workplaces?
- How is workplace culture created and maintained?
- How do organizations communicate with each other and with the public?

Contexts
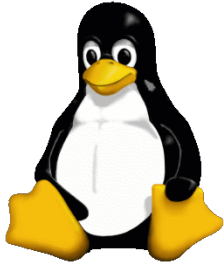
- Mostly firms
- Also non-profits, social movements

Typical approaches

- interviews
- surveys
- content analysis
- ethnography
- participatory research
- network analysis

Our Approach to Organizational Communication Research

Our context: Online peer production organizations

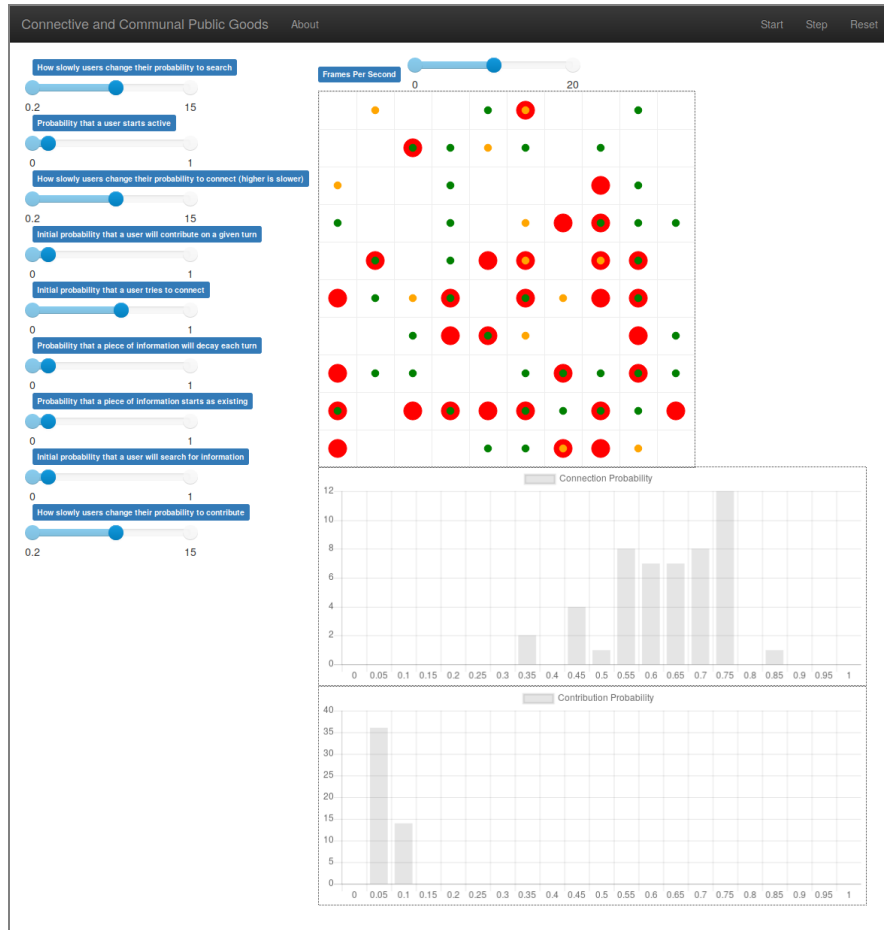*Decentralized, collaborative, and voluntary organizations.*

Our methodological approaches

Agent-based modeling

Benefits of agent-based modeling

- (More) believable models of decision-making
- Heterogeneity of agents
- Localized learning
- Crosses the micro-macro divide

Field experiments

- Design or policy changes can cause changes in organizational procesess
- Methods for causal inference from observational data allow us to test mechanisms
- Data is exhaustive, you can do retrospective analysis and you don't have to sample

Regression Discontinuity Design (RDD)

$$Y = \beta_0 + \beta_1 msgwall + \beta_2 \mathbf{wiki} + \beta_3 \mathbf{wiki} \times week + \epsilon$$

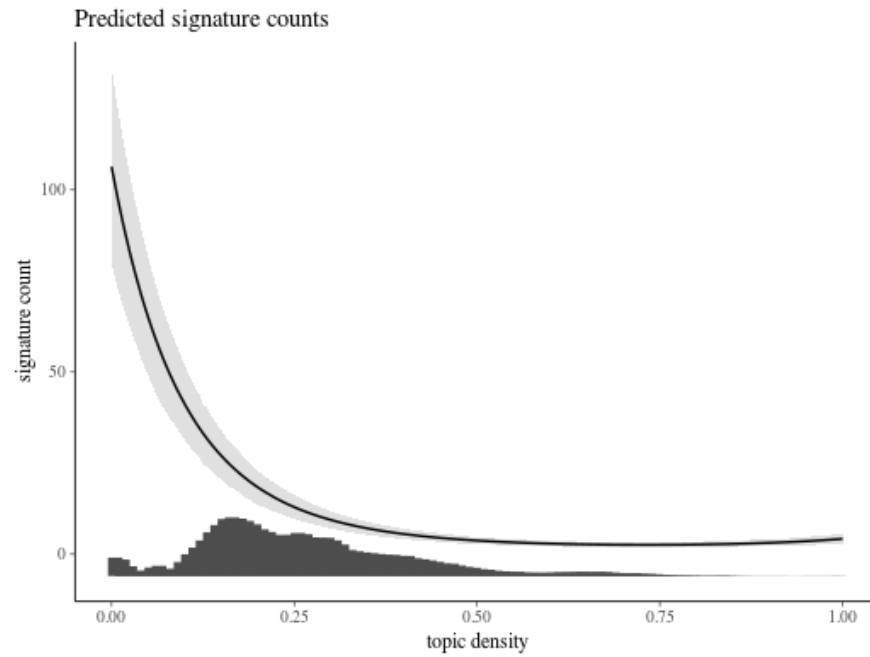# Natural Language Processing + Bayesian multi-level regression

- There are many similar online petitions
- Organizational ecology theory: Competition vs Complementarity?
- Problem: large number of petition creators, a few make a lot of petitions!
- Solution: fit the model using mc-stan

Topic Modeling Change.Org Petitions

This slide demonstrates pyLDAvis.

Competition Between Petitions

Predicted signature counts

What new questions can we answer with computational methods?