

## IRINA RABKINA

irabkina.github.io

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### EDUCATION

- 2020 (Expected) Northwestern University, Evanston, IL  
Ph.D. in Computer Science, Certificate in Cognitive Science  
Thesis: *Analogical Theory of Mind: Computational Model and Applications*
- 2015 Loyola University of Chicago, Chicago, IL  
M.S. in Computer Science  
Coursework only
- 2014 Scripps College, Claremont, CA  
B.A. Honors in Neuroscience, Computer Science Minor  
Thesis: *Examining the Cognitive Advantages and Disadvantages of the Bilingual Brain*

### PUBLICATIONS

#### Journal Articles

- (2020) **Rabkina, I.** and Forbus, K. D. An Analogical Model of Pretense. Under review.
- 2019 Nakos, C., **Rabkina, I.**, & Forbus, K. D. (2019). An Analogical Account of Reference Resolution. *Advances in Cognitive Systems*. To appear.
- 2017 Forbus, K. D., Liang, C., & **Rabkina, I.** (2017). Representation and Computation in Cognitive Models. *Topics in Cognitive Science*, 9(3), 694-718.

#### Conference Proceedings

- 2019 Chen, K., **Rabkina, I.**, McLure M. D., & Forbus, K. D. (2019) Human-like Sketch Object Recognition via Analogical Learning. *Proceedings AAAI 2019*, Honolulu, HI.
- 2019 **Rabkina, I.**, Nakos, C., & Forbus, K. D. (2019) Children's Sentential Complement Use Leads the Theory of Mind Development Period: Evidence from the CHILDES Corpus. *Proceedings of the 41<sup>st</sup> Meeting of the Cognitive Science Society*, Montreal, Canada.
- 2019 **Rabkina, I.** & Forbus, K.D. Analogical Reasoning for Intent Recognition and Action Prediction in Multi-Agent Systems. *Proceedings of the 7<sup>th</sup> Annual Conference on Advances in Cognitive Systems*. Cambridge, MA.
- 2019 Wilson, J. R., Chen, K., Crouse, M., Nakos, C., Neves Ribeiro, D., **Rabkina, I.**, & Forbus, K. D. Analogical Question Answering in a Multimodal Information Kiosk. *Proceedings of the 7<sup>th</sup> Annual Conference on Advances in Cognitive Systems*. Cambridge, MA.

- 2018 **Rabkina, I.**, McFate, C., & Forbus, K. D. (2018) Bootstrapping from Language in the Analogical Theory of Mind Model. *Proceedings of the 40<sup>th</sup> Annual Meeting of the Cognitive Science Society*, Madison, WI.
- 2018 Forbus, K. D., Hinrichs, T., & **Rabkina, I.** (2018). Building Analogy Systems: Some Lessons Learned. *Proceedings of the 6<sup>th</sup> Annual Conference on Advances in Cognitive Systems*. Stanford, CA.
- 2017 **Rabkina, I.**, McFate, C., Forbus, K. D., & Hoyos, C. (2017) Towards a Computational Analogical Theory of Mind. *Proceedings of the 39<sup>th</sup> Annual Meeting of the Cognitive Science Society*, London, England.

### Workshops & Other Presentations

- 2017 Blass, J., **Rabkina, I.**, and Forbus, K. D. (2017) Towards a Domain-independent Method for Evaluating and Scoring Analogical Inferences. *Computational Analogy Workshop, International Conference on Case Based Reasoning*. Trondheim, Norway.
- 2016 **Rabkina, I.** and Forbus, K.D. (2016) An Analogical Model of Pretense. Poster presented at the *38<sup>th</sup> Annual Meeting of the Cognitive Science Society*. Philadelphia, PA.
- 2016 **Rabkina, I.** and Justus, T. (2016) Bilingual English-Spanish Speakers Demonstrate Language-switching Costs, but no Bilingual Advantage, in a Modified Stroop Task. Poster presented at the *Association for Psychological Science*. Chicago, IL.
- 2015 **Rabkina, I.**, Lima Nogueira, L, and Albert, M. V. (2015) Real-time Activity Recognition Using Mobile Sensors: An Online Graphical Front-end. Poster presented at the *45<sup>th</sup> Annual Meeting of the Society for Neuroscience*. Chicago, IL.
- 2014 **Rabkina, I.** The Intersection of the Bilingual Advantage and Disadvantage. (2014) *Scripps College Capstone Presentations*. Claremont, CA.
- 2013 **Rabkina, I.** Computational Modeling of Bilingual Language Acquisition and Interference in Bilingual Choice. (2013) Poster presented at the *Fall Neuroscience Thesis Symposium of the W.M. Keck Science Department*. Claremont, CA.
- 2013 **Rabkina, I.** and Barazza, J. The Role of Sensitivity to Positive/Negative Valence in Polyvagal Theory. (2013) Poster presented at the *The Faculty for Undergraduate Neuroscience Poster Session*. San Diego, CA.
- 2013 **Rabkina, I.** Narrative Values and Moral Action: Investigating Links by Combining Quantitative Semantic Analysis and Behavioral Economics. (2013) *Mellon Fellowship Undergraduate Research Presentations*. Claremont, CA.

### AWARDS

- 2019 Terminal Year Fellowship, Northwestern University
- 2019 The Graduate School Conference Travel Grant, Northwestern University

- 2019 Cognitive Science Travel Grant, Northwestern University
- 2018 Summer Research (NREIP) Fellowship, Naval Research Laboratory
- 2018 Glushko Travel Award, Cognitive Science Society
- 2018 Graduate Cohort for Women Participant, Computing Research Association
- 2015 Cabell Fellowship, Northwestern University
- 2013 Claremont Neuroscience Research Fellowship, Scripps College
- 2013 Mellon Research Fellowship, Scripps College
- 2010 James E. Scripps Scholarship, Scripps College

## TEACHING EXPERIENCE

### Northwestern University

- Instructor: Knowledge Representation & Reasoning (scheduled for Winter 2020)
- Course Consultant: Conversational Interfaces (Spring 2019)
- Co-Instructor: Knowledge Representation & Reasoning (Winter 2019)
- Workshop Instructor: Computing Everywhere (Winter, Spring 2018; Winter, Spring 2019)
- Teaching Assistant: Introduction to Cognitive Modeling (Fall 2016; Fall 2017)

### Pomona College

- Peer Mentor: Computation & Cognition (Spring 2014)
- Peer Mentor: Foundations of Computer Science (Fall 2013)

### Scripps College

- Tutor: Computer Science (Fall 2013; Spring 2014)

## RESEARCH EXPERIENCE

- 2015-present **Research Assistant, Qualitative Reasoning Group, Northwestern University**  
My work focuses on the social reasoning capabilities of the Companion Cognitive Architecture. Specifically, I have developed a cognitive model of theory of mind reasoning via analogy and am applying it to improve virtual agents' interaction and collaboration in multi-agent (virtual and human-virtual mixed) environments.
- 2018 **NREIP Intern, Navy Center for Applied Research in Artificial Intelligence**  
Collaborated with researchers from the Naval Research Laboratory to build an experimental middleware to connect the Microsoft Malmo Minecraft environment with a variety of planning and reasoning systems.
- 2014-2015 **Research Assistant, Pervasive and Ambient Computing Lab, Loyola University of Chicago**

- 2013-2014      **Senior Thesis Student, Music and Language Cognition Lab, Pitzer College**
- 2013            **Summer Research Assistant, Cognitive & Systems Neuroscience Laboratory, Stanford University**
- 2012-2014      **Undergraduate Research Assistant, Center for Neuroeconomics Studies, Claremont Graduate University**
- 2011-2013      **Research Assistant, Spezio Lab, Scripps College**
- 2009, 2011      **Summer Student, Swanson Lab, University of California, San Francisco**

## **SERVICE TO PROFESSION**

### **Reviewing**

Cognitive Science Society, International Conference on Case Based Reasoning (ICCBR-2018)

### **Organizing**

Special Track on Computational Analogy @ ICCBR-2018

## **SERVICE TO DEPARTMENT**

### **Computer Science Department, Northwestern University**

Graduate Women in Computing, Founder & Co-President (2019-present)  
Artificial Intelligence Journal Club, Leadership Board Member (2017-present)  
Computer Science PhD Advisory Council, Founding Member (2017-2018)

### **Keck Science Department, Claremont, CA**

Socializing with Scientists, Leadership Board Member (2013-2014)

## **PROFESSIONAL EXPERIENCE**

- 2014-2015      Software Engineer, HERE Maps, Chicago, IL  
Built and maintained front-end interface to large-scale  
noSQL database. Trained and supported non-technical  
internal customers on interface and database use.

## **OUTREACH**

- 2015-present      ShelsCode, Evanston, IL  
Advisory Board Member & Volunteer Instructor