

# Jonathan Keane

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## Current position

Senior Data Scientist  
Socure

## Areas of specialization

Data science, software development, predictive models, statistical computing, data visualization, articulatory phonetics and phonology, signed languages, American Sign Language (ASL), co-speech gesture, fingerspelling, syntax, morphology, variation, data analysis, computational approaches to linguistics

## Education

- 2014 PhD (with honors) in Linguistics, University of Chicago  
*Dissertation title* Towards an articulatory model of handshape:  
What fingerspelling tells us about the phonetics and phonology of handshape in ASL.  
*Advisors* Diane Brentari and Jason Riggle
- 2007 BA (Magna cum Laude) in Linguistics, University of Florida  
*BA Thesis* Nominal Incorporation in English  
*Advisor* D. Gary Miller

## Awards + funding

- 2013–2015 NSF Doctoral Dissertation Research Improvement Grant  
Coarticulation and the phonetics of fingerspelling  
BCS1251807
- 2013 Nominated for best student presentation at TISLR 11 for *Towards an articulatory model of handshape*
- 2013–2014 Mellon Humanities Dissertation-Year Fellowship
- 2010 Rella I Cohn fund Graduate student research funding – ASL fingerspelling data collection
- 2008– Graduate Aid Initiative University of Chicago
- 2007 University Scholars Program University of Florida

## Papers + talks

### Journal articles

- 2019 Jordan Fenlon, Kensy Cooperrider, **Jonathan Keane**, Diane Brentari, Susan Goldin-Meadow. Comparing sign language and gesture: Insights from pointing. In *Glossa*, vol. 4, no 1.
- 2017 Leah C Geer, **Jonathan Keane**. Improving ASL fingerspelling comprehension in L2 learners with explicit phonetic instruction. In *Language Teaching Research*, vol. 0, no 0, pp. 1–19.
- 2017 Taehwan Kim, **Jonathan Keane**, Weiran Wang, Hao Tang, Jason Riggle, Gregory Shakhnarovich, Diane Brentari, Karen Livescu. Lexicon-Free Fingerspelling Recognition from Video: Data, Models, and Signer Adaptation. In *Computer Speech & Language*, vol. 46, pp. 209–232.
- 2017 **Jonathan Keane**, Zed Sevcikova, Karen Emmorey, Diane Brentari. A Theory-Driven Model of Handshape Similarity. In *Phonology*, vol. 34, no 2, pp. 221–241.
- 2015 Diane Brentari, Alessio Di Renzo, **Jonathan Keane**, Virginia Volterra. Cultural, and Linguistic Sources of a Handshape Distinction Expressing Agentivity. In *Topics in Cognitive Science*, vol. 7, no 1, pp. 95–123.

## Proceedings

- 2014 Leah Geer, **Jonathan Keane**. Exploring Factors that Contribute to Successful Fingerspelling Comprehension. In Nicoletta Calzolari, Khalid Choukri, Thierry Declerck, Hrafn Loftsson, Bente Maegaard, Joseph Mariani, Asuncion Moreno, Jan Odijk, Stelios Piperidis eds., *Proceedings of the Ninth International Conference on Language Resources and Evaluation (LREC'14)*.
- 2013 **Jonathan Keane**, Diane Brentari, Jason Riggle. Coarticulation in ASL fingerspelling. In *Proceedings of the North East Linguistic Society*, vol. 42.

## Book chapters

- 2016 **Jonathan Keane**, Diane Brentari. Fingerspelling: Beyond Handshape Sequences. In Marc Marschark, Patricia Spencer eds., *The Oxford Handbook of Deaf Studies in Language: Research, Policy, and Practice*, pp. 146–160, .
- 2015 **Jonathan Keane**, Diane Brentari, Jason Riggle. Segmentation and pinky extension in ASL fingerspelling. In Eric Raimy, Chuck Cairns eds., *The Segment in Phonology and Phonetics*, pp. 103–128, .

## Conference presentations

- 2017 **Jonathan Keane**. “A theory-driven model of handshape similarity” Linguistic Society of America 2017 Annual Meeting
- 2017 Taehwan Kim, **Jonathan Keane**, Weiran Wang, Hao Tang, Greg Shakhnarovich, Jason Riggle, Diane Brentari, Karen Livescu. “Unrestricted automatic fingerspelling recognition from video” Linguistic Society of America 2017 Annual Meeting
- 2017 Leah Geer, **Jonathan Keane**. “Teaching ASL fingerspelling to second-language learners: explicit versus implicit training” Linguistic Society of America 2017 Annual Meeting
- 2016 Leah Geer, **Jonathan Keane**. “Development of explicit versus implicit phonetic training for adult-learners of ASL” High Desert Linguistics Society
- 2014 **Jonathan Keane**, Leah Geer. “Holds or Transitions: Which Is More Important?” Chicago Linguistics Society 50
- 2013 **Jonathan Keane**. “What handshape tells us about active versus inactive articulators” Phonology 2013
- 2013 **Jonathan Keane**, Jason Riggle, Diane Brentari. “The Timing of ASL Fingerspelling” Texas Linguistics Society 14
- 2013 **Jonathan Keane**. “Towards an articulatory model of handshape” Theoretical Issues in Sign Language Research 11; London, UK
- 2013 Diane Brentari, Alessio Di Renzo, **Jonathan Keane**, Virginia Volterra. “Handshape (HS) as an Expression of Agency across Languages and Cultures” Theoretical Issues in Sign Language Research 11
- 2013 **Jonathan Keane**. “Developing an articulatory model of handshape” Midwest Speech and Language Days 2013
- 2012 **Jonathan Keane**, Diane Brentari, Jason Riggle. “Handshape assimilation in ASL fingerspelling” Societas Linguistica Europaea, Loanwords as Evidence in Formal Linguistics
- 2012 **Jonathan Keane**, Diane Brentari, Jason Riggle. “Categorical vs. Gradient: What ASL fingerspelling teaches us about the phonetics-phonology interface” Texas Linguistics Society 13
- 2012 **Jonathan Keane**, Diane Brentari, Jason Riggle. “Segments in ASL fingerspelling” CUNY Phonology Forum Conference on the Segment
- 2012 **Jonathan Keane**, Diane Brentari, Jason Riggle. “Handshape and coarticulation in ASL fingerspelling” Linguistic Society of America 2012 Annual Meeting
- 2011 **Jonathan Keane**, Susan Rizzo, Diane Brentari, Jason Riggle. “Phonetic coding of fingerspelling” Building sign language corpora in North America
- 2011 **Jonathan Keane**, Erin Dahlgren, Jason Riggle. “Variation in segment duration in ASL fingerspelling” Linguistic Society of America 2011 Annual Meeting

## Invited talks

- 2016 **Jonathan Keane**, Jordan Fenlon. “Quick tour of ELAN” sponsored by the Language, Variation, and Change workshop series at The University of Chicago
- 2014 **Jonathan Keane**. “Variation in fingerspelling: time, pinky extension, and what it means to be active” Gesture in Accented Language workshop at University of Illinois at Urbana-Champaign
- 2013 **Jonathan Keane**. “Variation in fingerspelling: time, pinky extension, and what it means to be active” Language Variation and Change; Language, Cognition, and Computation workshops
- 2011 **Jonathan Keane**. “Data coding of, and transition time in, ASL fingerspelling” The Language, Cognition, and Computation workshop, University of Chicago

## Posters

- 2016 **Jonathan Keane**, Leah Geer. “Understanding fingerspelling comprehension” Theoretical Issues in Sign Language Research 12
- 2015 **Jonathan Keane**. “Similarity of Handshape: an articulatory model” ICPhs 2015; Paper accepted as a poster, but withdrawn from the conference due to a scheduling conflict
- 2015 **Jonathan Keane**. “Quantifying handshape similarity: a theory-driven approach” Midwest Speech and Language Days
- 2014 **Jonathan Keane**, Diane Brentari, Jason Riggle. “The timing of ASL fingerspelling” Linguistic Society of America 2014 Annual Meeting
- 2013 **Jonathan Keane**, Diane Brentari, Jason Riggle. “Dispelling prescriptive rules in ASL fingerspelling: the case of -E-” Theoretical Issues in Sign Language Research 11; London, UK
- 2012 **Jonathan Keane**, Diane Brentari, Jason Riggle. “Pinky extension coarticulation in ASL fingerspelling” Illinois Speech Day
- 2011 **Jonathan Keane**, Diane Brentari, Jason Riggle. “Co-articulation in ASL fingerspelling” North East Linguistic Society 42: University of Toronto

## Qualifying papers

- 2011 **Jonathan Keane**. *A new look at scrambling in Japanese* University of Chicago Qualifying paper, defended 24 May 2011 Advisors: Karlos Arregi and Ming Xiang
- 2010 **Jonathan Keane**. *Segment duration and the phonetics of fingerspelling ASL* University of Chicago Qualifying paper, defended 18 October 2010 Advisors: Jason Riggle and Diane Brentari

## Software

- 2016 **Jonathan Keane**. “MocapGrip” Version 0.4 <https://github.com/jonkeane/mocapGrip>
- 2014 **Jonathan Keane**. “AMOHS Python module” Version 0.1.0 [zenodo.org/record/11456](https://zenodo.org/record/11456)

## Experience

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|-----------|--|-----------------------|
| 2014–2016 | <i>Post-Doctoral Fellow and Research Coordinator</i><br><a href="#">Center for Gesture, Sign, and Language</a> and <a href="#">Department of Linguistics</a> | University of Chicago |
| 2011–2014 | <i>Lab Manager</i> <a href="#">Sign Language Linguistics Laboratory</a><br>Diane Brentari  | University of Chicago |
| 2009–2014 | <i>Research Assistant</i> <a href="#">Chicago Language Modeling Laboratory</a><br>Jason Riggle<br>Automated sign language recognition working group          | University of Chicago |
| 2006      | <i>Research Assistant</i> Variation in Control Structures<br>Eric Potsdam  | University of Florida |

## Teaching

2013 fall	<i>Topic Instructor</i> Phonological Analysis 2 – Jason Riggle <i>Topics</i> Data coding, data analysis, R, statistical methods
2012 fall	<i>Lecturer</i> Introduction to Linguistics
2012 spring	<i>Teaching Assistant</i> Introduction to Linguistics – Ryan Bochnak <i>Guest lecture</i> Sign Language Linguistics
2012 winter	<i>Teaching Assistant</i> Introduction to Phonetics and Phonology – Alan Yu
2011 fall	<i>Guest lecture</i> Sign Language Linguistics – The phonetics of fingerspelling and its relation to ASL
2011 spring	<i>Teaching Assistant</i> Introduction to Syntax – Amy Dahlstrom <i>Guest lecture</i> Crosslinguistic syntactic reflexes of topic and focus

## Service

2011–2013	<i>Coordinator</i> Council on Advanced Studies workshop: Language, Cognition, and Computation
2013	<i>Reviewer</i> 49th Annual Meeting of the Chicago Linguistic Society
2012	<i>Reviewer</i> 48th Annual Meeting of the Chicago Linguistic Society
2011	<i>Graduate Coordinator</i> for prospective student recruitment activities
2011	<i>Reviewer</i> 47th Annual Meeting of the Chicago Linguistic Society
2011	<i>Graduate student liaison</i> to faculty
2009–10	<i>Officer and conference organizer</i> Chicago Linguistic Society
2010	<i>Reviewer</i> 46th Annual Meeting of the Chicago Linguistic Society
2009	<i>Reviewer</i> 45th Annual Meeting of the Chicago Linguistic Society (Committee: Syntax)

## Memberships

2013–	Sign Language Linguistics Society
2008–	Linguistic Society of America

## Languages

English (native), American Sign Language (fluent), German (reading), Swedish (basic), Japanese (basic), Hebrew (basic)

## Computer languages + applications

Python, R, SQL,  $\text{\LaTeX}$ , (x)HTML, PHP, C, ELAN, microcontrollers, emacs, OpenOffice, Adobe Photoshop, Adobe Illustrator, Adobe InDesign, Mac OS X, Linux/UNIX, PhaseSpace motion capture equipment