

# Jonathan K. Kummerfeld

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Name: jkummerf at University: umich.edu

**Education**      PhD in Computer Science      2010–2016  
University of California, Berkeley, Adviser: Dan Klein  
Thesis: “Algorithms for Identifying Syntactic Errors and Parsing with Graph Structured Output”

Bachelor of Science (Advanced) (Honours) Class I with University Medal      2006–2009  
University of Sydney, Adviser: James Curran  
Thesis: “Adaptive Supertagging for Faster Parsing”

## Publications

### Computational Linguistics

Parsing with Traces: An  $O(n^4)$  Algorithm and a Structural Representation  
J. K. Kummerfeld and D. Klein  
*Transactions of the Association for Computational Linguistics*, 2017

Identifying Products in Online Cybercrime Marketplaces: A Dataset for Fine-grained Domain Adaptation  
G. Durrett, J. K. Kummerfeld, T. Berg-Kirkpatrick, R. S. Portnoff, S. Afroz, D. McCoy, K. Levchenko, and V. Paxson  
*Empirical Methods in Natural Language Processing*, 2017

Understanding Task Design Trade-offs in Crowdsourced Paraphrase Collection  
Y. Jiang, J. K. Kummerfeld, and W. S. Laseck  
*Association for Computational Linguistics*, 2017

Tools for Automated Analysis of Cybercriminal Markets  
R. S. Portnoff, S. Afroz, G. Durrett, J. K. Kummerfeld, T. Berg-Kirkpatrick, D. McCoy, K. Levchenko, and V. Paxson  
*International World Wide Web Conferenc*, 2017

An Empirical Analysis of Optimization for Max-Margin NLP  
J. K. Kummerfeld, T. Berg-Kirkpatrick, and D. Klein  
*Empirical Methods in Natural Language Processing*, 2015

Error-Driven Analysis of Challenges in Coreference Resolution  
J. K. Kummerfeld and D. Klein  
*Empirical Methods in Natural Language Processing*, 2013

An Empirical Examination of Challenges in Chinese Parsing  
J. K. Kummerfeld, D. Tse, J. R. Curran, and D. Klein  
*Association for Computational Linguistics*, 2013

Parser Showdown at the Wall Street Corral: An Empirical Investigation of Error Types in Parser Output  
J. K. Kummerfeld, D. Hall, J. R. Curran, and D. Klein  
*Empirical Methods in Natural Language Processing*, 2012

Robust Conversion of CCG Derivations to Phrase Structure Trees  
J. K. Kummerfeld, D. Klein, and J. R. Curran  
*Association for Computational Linguistics*, 2012

Mention Detection: Heuristics for the OntoNotes annotations  
J. K. Kummerfeld, M. Bansal, D. Burkett, and D. Klein  
*Conference on Natural Language Learning*, 2011

Faster Parsing by Supertagger Adaptation  
J. K. Kummerfeld, J. Roesner, T. Dawborn, J. Haggerty, J. Curran, and S. Clarke  
*Association for Computational Linguistics*, 2010

Morphological Analysis Can Improve a CCG Parser for English  
M. Honnibal, J. K. Kummerfeld, and J. R. Curran  
*International Conference on Computational Linguistics*, 2010

Faster Parsing and Supertagging Model Estimation  
J. K. Kummerfeld, J. Roesner, and J. R. Curran  
*Australasian Language Technology Association*, 2009

Classification of Verb Particle Constructions with the Google Web1T Corpus  
J. K. Kummerfeld and J. R. Curran  
*Australasian Language Technology Association*, 2008

### Physical Sciences

High-velocity Clouds in the Galactic All Sky Survey. I. Catalog  
V. A. Moss, N. M. McClure-Griffiths, T. Murphy, D. J. Pisano, J. K. Kummerfeld, and  
J. R. Curran  
*The Astrophysical Journal Supplement Series*, 2013, 209:12

Spatiotemporal Hierarchy of Relaxation Events, Dynamical Heterogeneities, and Structural Reorganization in a Supercooled Liquid  
R. Candelier, A. Widmer-Cooper, J. K. Kummerfeld, O. Dauchot, G. Biroli, P. Harrowell, and D. R. Reichman  
*Physical Review Letters*, 2010, 105:135702

The Densest Packing of AB Binary Hard-Sphere Homogeneous Compounds across all Size Ratios  
J. K. Kummerfeld, T. S. Hudson, and P. Harrowell  
*The Journal of Physical Chemistry B*, 2008, 112:10773–10776

**Employment** University of Michigan September 2016 – Present  
Postdoctoral Research Fellow in Computer Science Engineering.

### Consultant

[Clic](#) January 2017 – Present  
Technical adviser for product development.

Stealth startup May 2015 – Present  
Technical adviser for product development.

[WriteLab](#) March 2014 – Present  
Technical adviser for automatic linguistic cue identification.

[Techbridge](#) September 2013 - May 2014  
Development of the High School CS Curriculum.

### Software Engineer – Intern

[Google Research](#) May - August 2012  
Mountain View Office, Natural Language Processing team.

Google December 2007 - February 2008  
Sydney Office, Infrastructure team.

**Research Assistant**, University of Sydney

|   |            |
|---|------------|
| School of Information Technologies, Prof. Kay | 2010       |
| School of Physics, Dr. Murphy                 | 2010       |
| School of Chemistry, Prof. Harrowell          | 2009       |
| School of Letters, Art and Media, Dr. Bode    | 2008, 2009 |

**Teaching and Talks**

**Instructor**

|   |             |
|---|-------------|
| Artificial Intelligence, Berkeley   | Summer 2014 |
| Co-taught upper division course – gave lectures, managed TAs, and prepared exams. |             |
| Evaluation: 6.3 / 7 (top 11% of UCB EECS instructors with public results).        |             |

**Talks**

|   |                        |
|---|------------------------|
| Midwest Speech and Language Days & Computational Linguistics Colloquium | 2017                   |
| University of Macquarie, Centre for Language Technology                 | June 2016, August 2017 |
| Sydney Humans, Language, Technology MeetUp                              | May 2016, August 2017  |
| University of Sydney  | May 2016               |
| Information Sciences Institute, Natural Language Seminar                | March 2016             |
| CommonCrawl, Big Open Data Hackathon                                    | May 2014               |
| Cambridge Computer Laboratory   | August 2013            |

**Lecturer**

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|--|-------------|
| The Beauty and Joy of Computing, Berkeley      | Summer 2014 |
| Applied Natural Language Processing, Berkeley  | Fall 2013   |
| Proseminar in the Digital Humanities, Berkeley | Spring 2013 |

**Teaching Assistant**

|   |           |
|---|-----------|
| Artificial Intelligence, Berkeley   | Fall 2011 |
| Held sections and office hours, prepared assignments, exams and sections. |           |

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| Artificial Intelligence (Advanced), Sydney                   | Fall 2009 |
| Held sections (third year elective Computer Science course). |           |

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|---|-----------|
| Informatics (Advanced), Sydney  | Fall 2009 |
| Held sections and graded assignments (first year core Computer Science course). |           |

**High School Outreach**

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|---|-----------|
| Australian Informatics Olympiad, ANU                          | 2007–2010 |
| Gave lectures, prepared exams and autograders, prepared labs. |           |

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|---|------------------|
| National Computer Science School, Sydney  | 2007, 2008, 2010 |
| Led a group of 16 high school students, who learned python and built a search engine. |                  |

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|-------------------------------------|------------------------|
| Computational Linguistics Olympiads | 2013, 2014, 2015, 2016 |
| Set problems for the competition.   |                        |

**Awards and Honors**

**Chair's Special Award**

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|---|------|
| For services to the EECS department during student admissions and recruitment | 2013 |
|---|------|

**Outstanding Graduate Student Instructor Award**

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| University wide award in recognition of exceptional achievements as a teacher | 2011 |
|---|------|

**General Sir John Monash Award**

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| “Australia's most prestigious postgraduate scholarships” | 2010 - 2013 |
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**University Medal in Computer Science**

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|---|------|
| For outstanding results, awarded at the discretion of the university senate | 2009 |
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|-----------------------------|---|-----------|
| <b>Professional Service</b> | Graduate Admissions Committee, Michigan Artificial Intelligence   | 2017      |
|                             | Graduate Admissions Committee, Berkeley Artificial Intelligence   | 2015      |
|                             | President, Berkeley Computer Science Graduate Student Association | 2012–2013 |

**Program Committee**

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|--|------------------------|
| Transactions of the Association for Computational Linguistics (TACL)   | 2016                   |
| Computer Speech & Language   | 2017                   |
| Association for Computational Linguistics (ACL)                        | 2014 (secondary), 2017 |
| North American Chapter of the ACL (NAACL)                              | 2015, 2016             |
| Empirical Methods in Natural Language Processing (EMNLP)               | 2015, 2016, 2017       |
| European Chapter of the ACL (EACL)                                     | 2016, 2017             |
| International Joint Conference on Natural Language Processing (IJCNLP) | 2017                   |
| Association for the Advancement of Artificial Intelligence (AAAI)      | 2016                   |
| World Wide Web Conference (WWW)  | 2016                   |
| Conference on Natural Language Learning (CoNLL)                        | 2016, 2017             |
| Workshop on Ethics in NLP  | 2017                   |
| Student Research Workshop at NAACL                                     | 2015, 2016             |
| Student Research Workshop at ACL                                       | 2014                   |