

## Andrew Cropper

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### Education

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|---|------|
| PhD Computer Science, Imperial College London                         | 2017 |
| Supervisor: Professor Stephen Muggleton                               |      |
| Thesis: Efficiently learning efficient programs                       |      |
| MSc Computer Science, University of Oxford                            | 2011 |
| Supervisor: Dr Brian Harrington                                       |      |
| Thesis: Predicting stock volume using Twitter                         |      |
| BSc Computer Science, Nottingham Trent University                     | 2009 |
| Supervisor: Dr Caroline Langensiepen                                  |      |
| Dissertation: Identifying and inferring objects from natural language |      |

### Academic employment

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| Junior Research Fellow, Hertford College, University of Oxford | 2018 - |
| Research Assistant, University of Cambridge                    | 2013   |

### Industry employment

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| Research Engineer, MFG Labs, Paris, France       | 2012 - 2013 |
| Software Engineer, Esendex, Nottingham           | 2010        |
| Software Engineer, Counter Solutions, Derbyshire | 2007 - 2008 |

### Research visits

|   |                  |
|---|------------------|
| Massachusetts Institute of Technology           | 2016, 2018, 2019 |
| Visited Professor Josh Tenenbaum                |                  |
| National Institute of Informatics, Tokyo, Japan | 2014, 2015, 2017 |
| Visited Professor Katsumi Inoue                 |                  |

### Awards

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| <i>Machine Learning journal</i> best paper award         | ILP 2018 |
| <i>Machine Learning journal</i> best student paper award | ILP 2014 |

### Grants and fellowships

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| Google Cloud Platform grant (\$5000)                               | 2019 |
| Junior research fellowship, Hertford College, University of Oxford | 2018 |
| National Institute of Informatics internship (¥370,500)            | 2014 |
| Syngenta fellowship (£30,000)                                      | 2013 |
| Full BBSRC PhD case studentship (£100,173)                         | 2013 |

## Publications

### Journals

1. A. Cropper and S. Tourret. Logical minimisation of metarules. *Machine Learning*. Accepted
2. A. Cropper, R. Evans, and M. Law. Inductive general game playing. *Machine Learning*. Accepted
3. A. Cropper, R. Morel, and S. H. Muggleton. Learning higher-order logic programs. *Machine Learning*. Accepted
4. A. Cropper and S. H. Muggleton. Learning efficient logic programs. *Machine Learning*, 108(7):1063–1083, Jul 2019

### Conferences

1. A. Cropper. Playgol: learning programs through play. In S. Kraus, editor, *Proceedings of the Twenty-Eighth International Joint Conference on Artificial Intelligence, IJCAI 2019, Macao, China, August 10-16, 2019*, pages 6074–6080. ijcai.org, 2019
2. S. Tourret and A. Cropper. SLD-resolution reduction of second-order horn fragments. In F. Calimeri, N. Leone, and M. Manna, editors, *Logics in Artificial Intelligence - 16th European Conference, JELIA 2019, Rende, Italy, May 7-11, 2019, Proceedings*, volume 11468 of *Lecture Notes in Computer Science*, pages 259–276. Springer, 2019
3. R. Morel, A. Cropper, and C. L. Ong. Typed meta-interpretive learning of logic programs. In F. Calimeri, N. Leone, and M. Manna, editors, *Logics in Artificial Intelligence - 16th European Conference, JELIA 2019, Rende, Italy, May 7-11, 2019, Proceedings*, volume 11468 of *Lecture Notes in Computer Science*, pages 198–213. Springer, 2019
4. A. Cropper and S. Tourret. Derivation reduction of metarules in meta-interpretive learning. In F. Riguzzi, E. Bellodi, and R. Zese, editors, *Inductive Logic Programming - 28th International Conference, ILP 2018, Ferrara, Italy, September 2-4, 2018, Proceedings*, volume 11105 of *Lecture Notes in Computer Science*, pages 1–21. Springer, 2018
5. A. Cropper and S. H. Muggleton. Learning higher-order logic programs through abstraction and invention. In S. Kambhampati, editor, *Proceedings of the Twenty-Fifth International Joint Conference on Artificial Intelligence, IJCAI 2016, New York, NY, USA, 9-15 July 2016*, pages 1418–1424. IJCAI/AAAI Press, 2016
6. A. Cropper. Logic-based inductive synthesis of efficient programs. In S. Kambhampati, editor, *Proceedings of the Twenty-Fifth International Joint Conference on Artificial Intelligence, IJCAI 2016, New York, NY, USA, 9-15 July 2016*, pages 3980–3981. IJCAI/AAAI Press, 2016
7. A. Cropper and S. H. Muggleton. Learning efficient logical robot strategies involving composable objects. In Q. Yang and M. Wooldridge, editors, *Proceedings of the Twenty-Fourth International Joint Conference on Artificial Intelligence, IJCAI 2015, Buenos Aires, Argentina, July 25-31, 2015*, pages 3423–3429. AAAI Press, 2015
8. A. Cropper, A. Tamaddoni-Nezhad, and S. H. Muggleton. Meta-interpretive learning of data transformation programs. In K. Inoue, H. Ohwada, and A. Yamamoto, editors, *Inductive Logic Programming - 25th International Conference, ILP 2015, Kyoto, Japan, August 20-22, 2015, Revised Selected Papers*, volume 9575 of *Lecture Notes in Computer Science*, pages 46–59. Springer, 2015
9. C. Farquhar, G. Grov, A. Cropper, S. Muggleton, and A. Bundy. Typed meta-interpretive learning for proof strategies. In K. Inoue, H. Ohwada, and A. Yamamoto, editors, *Late Breaking Papers of the 25th International Conference on Inductive Logic Programming, Kyoto University, Kyoto, Japan, August 20th to 22nd, 2015.*, volume 1636 of *CEUR Workshop Proceedings*, pages 17–32. CEUR-WS.org, 2015
10. A. Cropper. Learning efficient logic programs. In Q. Yang and M. Wooldridge, editors, *Proceedings of the Twenty-Fourth International Joint Conference on Artificial Intelligence, IJCAI 2015, Buenos Aires, Argentina, July 25-31, 2015*, pages 4359–4360. AAAI Press, 2015

11. A. Cropper and S. Muggleton. Can predicate invention compensate for incomplete background knowledge? In S. Nowaczyk, editor, *Thirteenth Scandinavian Conference on Artificial Intelligence - SCAI 2015, Halmstad, Sweden, November 5-6, 2015*, volume 278 of *Frontiers in Artificial Intelligence and Applications*, pages 27–36. IOS Press, 2015
12. A. Cropper and S. H. Muggleton. Logical minimisation of meta-rules within meta-interpretive learning. In J. Davis and J. Ramon, editors, *Inductive Logic Programming - 24th International Conference, ILP 2014, Nancy, France, September 14-16, 2014, Revised Selected Papers*, volume 9046 of *Lecture Notes in Computer Science*, pages 62–75. Springer, 2014

### Workshops

1. S. Tourret and A. Cropper. SLD-resolution reduction of second-order Horn fragments. *Termgraph 2018*.
2. A. Cropper. Identifying and inferring objects from textual descriptions of scenes from books. In R. Neykova and N. Ng, editors, *2014 Imperial College Computing Student Workshop, ICCSW 2014, September 25-26, 2014, London, United Kingdom*, volume 43 of *OASICS*, pages 19–26. Schloss Dagstuhl - Leibniz-Zentrum fuer Informatik, 2014

### Teaching

Tutor in Computational Logic, Stanford University 2019

### Supervision

#### PhD theses

Rolf Morel, University of Oxford 2019 -

#### MSc theses

Rolf Morel, University of Oxford 2018

### Services

#### Program committee

StarAI 2020

IJCAI 2019