Andrew Cropper

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Education

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

Employment

Junior Research Fellow, Hertford College, University of Oxford	2018 -
Research Assistant, University of Cambridge	2013
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 Worked with Professor Josh Tenenbaum on program induction	2016, 2018
National Institute of Informatics, Tokyo, Japan Worked with Professor Katsumi Inoue on inductive logic programming	2014, 2015, 2017

Awards

Machine Learning journal best paper award	ILP 2018
Machine Learning journal best student paper award	ILP 2014

Grants and fellowships

Junior research fellowship, Hertford College, University of Oxford	2018
National Institute of Informatics international internship program	2014
Syngenta fellowship	2013
Full BBSRC PhD case studentship	2013

Publications

Journals

1. A. Cropper and S. H. Muggleton. Learning efficient logic programs. *Machine Learning*, Apr 2018

Conferences

1. A. Cropper. Playgol: Learning programs through play. IJCAI 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

MSc theses

Rolf Morel, University of Oxford   2018

BSc projects

Andrei Diaconu, University of Oxford   2019

Alastair Flynn, University of Oxford   2019

Services

Reviewer

IJCAI 2019

ICCSW 2014

Talks

Inductive general game playing, Dagstuhl workshop on inductive programming, 2019.

Playgol: learning programs through play, Dagstuhl workshop on inductive programming, 2019.

Learning algorithms using logic, University of Oxford, 2019.

Learning efficient logic programs, MIT, 2018.

Learning efficient logic programs, Dagstuhl workshop on inductive programming, 2017.

Learning higher-order logic programs, Dagstuhl workshop on inductive programming, 2017.

Learning efficient logic programs, Machine Intelligence 20, 2016.

Logic-based learning of programs from input/output examples, UC Berkeley, 2016.

Metagol, Dagstuhl workshop on inductive programming, 2015.

Predicate invention in meta-interpretive learning, Wakayama University, Japan, 2014.