Andrew Cropper

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Education

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

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 — 2016, 2018
Worked with Professor Josh Tenenbaum on program induction

National Institute of Informatics, Tokyo, Japan — 2014, 2015, 2017
Worked with Professor Katsumi Inoue on inductive logic programming

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

Teaching

Tutor in Computational Logic, Stanford University 2019

Supervision

Rolf Morel, MSc Computer Science, University of Oxford 2018

Publications

Journals

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

Conferences

1. S. Tourret and A. Cropper. Sld-resolution reduction of second-order horn fragments. In *JELIA*, 2019. To appear
2. R. Morel, A. Cropper, and L. Ong. Typed meta-interpretive learning of logic programs. In *JELIA*, 2019. To appear
3. 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
4. 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
5. 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
6. 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
7. 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
8. 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
9. 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
10. 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

11. 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

Talks

Learning efficient logic programs, MIT, USA, September 2018.

Learning efficient logic programs, *Workshop on approaches and applications of inductive programming*, Dagstuhl, Germany, October 2017.

Learning higher-order logic programs, *Workshop on approaches and applications of inductive programming*, Dagstuhl, Germany, October 2017.

Learning efficient logic programs, *Machine Intelligence 20 workshop on human-like computing*, London, UK, October 2016.

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

Metagol, *Workshop on approaches and applications of inductive programming*, Dagstuhl, Germany, October 2015.

Predicate invention in meta-interpretive learning, *Meeting on abductive and inductive reasoning*, Wakayama University, Japan, November 2014.