

## Andrew Cropper

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### Education

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

### Employment

<b>Junior Research Fellow</b> , Hertford College, University of Oxford Working on inductive logic programming	2018 -
<b>Research Assistant</b> , University of Cambridge Worked with Dr Eiko Yonkei on distributed graph algorithms	2013
<b>Research Engineer</b> , MFG Labs, Paris, France Designed large-scale distributed machine learning algorithms	2012 - 2013
<b>Software Engineer</b> , Esendex, Nottingham Developed analytical tools to monitor SMS traffic	2010
<b>Software Engineer</b> , Counter Solutions, Derbyshire Developed analytical tools to monitor servers	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

• Junior research fellowship, Hertford College, University of Oxford	2018
• <i>Machine Learning</i> best student paper	ILP 2014
• National Institute of Informatics international internship program	2014

- Syngenta fellowship 2013
- Full BBSRC PhD case studentship 2013

## **Publications**

### **Journals**

- A. Cropper and S.H. Muggleton. Learning efficient logic programs. *Machine learning*. 2018. <https://doi.org/10.1007/s10994-018-5712-6>

### **Conferences**

- A. Cropper and S. Tourret. Derivation reduction of metarules in meta-interpretive learning. *ILP 2018*.
- A. Cropper and S.H. Muggleton. Learning higher-order logic programs through abstraction and invention. In *Proceedings of the 25th International Joint Conference Artificial Intelligence (IJCAI 2016)*, pages 1418-1424. IJCAI, 2016.
- A. Cropper and S.H. Muggleton. Learning efficient logical robot strategies involving composable objects. In *Proceedings of the 24th International Joint Conference Artificial Intelligence (IJCAI 2015)*, pages 3423-3429. IJCAI, 2015.
- A. Cropper, A. Tamaddoni-Nezhad, and S.H. Muggleton. Meta-interpretive learning of data transformation programs. In *Proceedings of the 25th International Conference on Inductive Logic Programming (ILP2015)*, pages 46-59. Springer-Verlag, 2015. LNAI 9046.
- C. Farquhar, G. Grov, A. Cropper, S.H. Muggleton, and A. Bundy. Typed meta-interpretive learning for proof strategies. In *Late Breaking Papers of the 25th International Conference on Inductive Logic Programming*, pages 17-32, 2015.
- A. Cropper and S.H. Muggleton. Can predicate invention compensate for incomplete background knowledge? In *Thirteenth Scandinavian Conference on Artificial Intelligence - SCAI 2015*, Halmstad, Sweden, November 5-6, 2015, pp. 27-36.
- A. Cropper and S.H. Muggleton. Logical minimisation of meta-rules within meta-interpretive learning. In *Proceedings of the 24th International Conference on Inductive Logic Programming (ILP2014)*, pages 62-75. Springer-Verlag, 2015. LNAI 9046.

### **Workshops**

- S. Tourret and A. Cropper. SLD-resolution reduction of second-order Horn fragments. *Termgraph 2018*.
- A. Cropper. Identifying and inferring objects from textual descriptions of scenes from books. In *2014 Imperial College Computing Student Workshop, ICCSW 2014*, September 25-26, 2014, London, United Kingdom, pp. 19-26.

### **Extended abstracts**

- A. Cropper. Logic-based inductive synthesis of efficient programs. In *Proceedings of the 25th International Joint Conference Artificial Intelligence (IJCAI 2016)*, pages 3980-3981. IJCAI, 2016.
- A. Cropper. Learning efficient logic programs. In *Proceedings of the 24th International Joint Conference Artificial Intelligence (IJCAI 2015)*, pages 4359-4360. IJCAI, 2015.

## Talks

- 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.