# Andrew Cropper

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## Education

**PhD Computer Science**, Imperial College London — Oct 2013 -
Supervisor: Professor Stephen Muggleton
Thesis: Efficient induction of efficient programs

**MSc Computer Science**, University of Oxford — Oct 2010 - Oct 2011
Supervisor: Dr Brian Harrington
Thesis: Modelling stock volume using Twitter

**BSc Computer Science**, Nottingham Trent University — Oct 2005 - Jul 2009
Graduated with first-class honours
Supervisor: Dr Caroline Langensiepen
Dissertation: Identifying and inferring objects from natural language text

## Experience

**Research Assistant**, University of Cambridge — Jul 2013 - Oct 2013
Worked with Dr Eiko Yonkei on distributed asynchronous graph algorithms

**Research Engineer**, MFG Labs, Paris, France — Jan 2012 - Jul 2013
Designed and developed large-scale machine learning algorithms

**Software Engineer**, Esendex, Nottingham — Jan 2010 - Oct 2010
Developed analytical tools to monitor business SMS traffic

**Software Engineer**, Counter Solutions, Derbyshire — Jun 2007 - Oct 2008
Developed analytical tools to monitor database and web servers

## Research visits

Department of Brain and Cognitive Sciences, Massachusetts Institute of Technology, USA — Jul 2016

Inoue Lab, National Institute of Informatics, Tokyo, Japan — Aug 2015 - Sep 2015

Inoue Lab, National Institute of Informatics, Tokyo, Japan — Oct 2014 - Dec 2014

## Publications

Conferences


1. 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.
2. 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.
3. 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.
4. 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.
5. 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.

6. A. Cropper. Learning efficient logic programs. In *Proceedings of the 24th International Joint Conference Artificial Intelligence (IJCAI 2015)*, pages 4359-4360. IJCAI, 2015.
7. 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.
8. 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

1. 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.

## Awards and grants

- *Machine Learning Journal* best student paper — ILP 2014
- National Institute of Informatics international internship program — Oct 2014 - Dec 2014
- Syngenta fellowship — Oct 2013 - Oct 2017
- Full BBSRC PhD case studentship — Oct 2013 - Oct 2017

## Professional services

*Reviewing*

- 2014 Imperial College Computing Student Workshop

*Other*

- IJCAI 2016 student volunteer
- IJCAI 2015 student volunteer

## Talks

- Logic-based inductive synthesis of efficient programs, IJCAI16 doctoral consortium, New York, Jul 2016.
- Logic-based learning of programs from input/output examples, UC Berkeley, Jun 2016.
- Can predicate invention compensate for incomplete background knowledge? SCAI15, Halmstad, Sweden, Nov 2015.
- Meta-interpretive learning of data transformation programs, ILP15, Kyoto, Aug 2015.
- Learning efficient logical robot strategies involving composable objects. ILP15, Kyoto, Aug 2015.
- Learning efficient logical robot strategies involving composable objects. IJCAI15, Buenos Aires, Jul 2015.
- Learning efficient logic programs, IJCAI15 doctoral consortium, Buenos Aires, Jul 2015.
- Meta-interpretive learning normal logic programs, Meeting on meta-interpretive learning, Imperial College London, Jan 2015.
- Predicate invention in meta-interpretive learning, Meeting on abductive and inductive reasoning, Wakayama University, Japan, Dec 2014.
- Logical minimisation of meta-rules within meta-interpretive learning, ILP14, Nancy, Sep 2014.
- Can predicate invention in meta-interpretive learning compensate for incomplete background knowledge? ILP14, Nancy, Sep 2014.
- Identifying and inferring objects from textual descriptions of scenes from books, Imperial College Computing Student Workshop, London, UK, Sep 2014.