Andrew Cropper
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Academic employment

- Research Fellow, University of Oxford 2021-
- Junior Research Fellow, University of Oxford 2018-2021
- Research Assistant, University of Cambridge 2013

Education

- PhD Computer Science, Imperial College London 2018
- MSc Computer Science, University of Oxford 2011
- BSc Computer Science, Nottingham Trent University 2009

Awards and honours

- AAAI new faculty highlights AAAI 2023
- Best paper ILP 2019
- Best paper ILP 2018
- Best student paper ILP 2014

Fellowships, scholarships, and grants

- 2021-2026 EPSRC early career fellowship, *The Automatic Computer Scientist* (sole PI) £1.4m
- 2021-2022 EPSRC kick-starter grant, *Explainable drug design* (PI) £81k
- 2021-2024 Non-stipendiary junior research fellowship, Hertford College, University of Oxford
- 2019 Google cloud platform grant (sole PI) £4k
- 2018-2021 Junior research fellowship, Hertford College, University of Oxford (sole PI) £120k
- 2014 National Institute of Informatics internship £3k
- 2013-2017 Syngenta fellowship £30k
- 2013-2017 BBSRC PhD studentship £100k

Supervision

I am/was the primary supervisor of the following students/postdocs except where otherwise stated:

Postdoc

- Minghao Liu 2023-
- Filipe Gouveia 2023-
- Céline Hocquette 2021-

PhD/DPhil

- Rolf Morel 2019-2023

MSc

- John Wahlig 2021
- Brad Hunter 2021
- Rolf Morel 2018

BA

- Maria-Alexa Tudose (*co-supervisor*) 2023
- Victor Vasiesiu 2022
- Bogdan Cretu 2022
- Cristian Dinu 2021, 2022
- Andrei Diaconu 2020
- Alastair Flynn 2020

Summer intern

- Joar Skalse 2018

External PhD examiner

- Lidia Contreras Ochando, Universitat Politècnica de València 2020

Teaching

- Introduction to formal proof, University of Oxford 2020
- Computational logic, Stanford University (Oxford campus) 2019

Industrial employment

- Researcher, MFG Labs, Paris, France 2012-2013
- Software Engineer, Esendex, Nottingham 2009-2010
- Software Engineer, Counter Solutions, Derby 2007-2008

Consultancy

- Kantar, London 2023

Research visits

- University of Helsinki, Matti Järvisalo 2023
- MIT, Josh Tenenbaum 2016, 2018, 2019
- KU Leuven, Sebastijan Dumančić 2019
- National Institute of Informatics, Japan, Katsumi Inoue 2014, 2015, 2017

Visitors hosted

- Andreas Niskanen (University of Helsinki) 2023
- Tom Silver (MIT) 2023
- David Cerna (JKU) 2022, 2023
- Ute Schmid (Bamberg) 2022
- Sebastijan Dumančić (TU Delft) 2022

Publications

Journals

1. R. Morel and A. Cropper. Learning programs by explaining failures. MLJ 2023
2. C. Hocquette and A. Cropper. Learning programs with magic values. MLJ 2023
3. A. Cropper and S. Dumancic. Inductive logic programming at 30: A new introduction. JAIR 2022
4. A. Cropper, S. Dumančić, R. Evans, and S. H. Muggleton. Inductive logic programming at 30. MLJ 2022
5. A. Cropper, and R. Morel. Learning programs by learning from failures. MLJ 2021
6. A. Cropper, and S. Tourret. Logical reduction of metarules. MLJ 2020
7. A. Cropper, R. Evans, and M. Law. Inductive general game playing. MLJ 2020
8. A. Cropper R. Morel, and S. H. Muggleton. Learning higher-order logic programs. MLJ 2020
9. A. Cropper and S. H. Muggleton. Learning efficient logic programs. MLJ 2019

Conferences

1. C. Hocquette, A. Niskanen, M. Jarvisalo, and A. Cropper. Learning optimal logic programs from noisy data. AAAI 2024
2. D. Cerna and A. Cropper. Generalisation through negation and predicate invention. AAAI 2024
3. A. Cropper and C. Hocquette. Learning logic programs by combining programs. ECAI 2023
4. C. Hocquette and A. Cropper. Relational program synthesis with numerical reasoning. AAAI 2023
5. A. Cropper and C. Hocquette. Learning logic programs by discovering where not to search. AAAI 2023
6. A. Cropper. The automatic computer scientist. AAAI 2023
7. A. Cropper. Learning logic programs though divide, constrain, and conquer. AAAI 2022
8. S. Dumancic, T. Guns, and A. Cropper. Knowledge refactoring for inductive program synthesis. AAAI 2021
9. A. Cropper and S. Dumančić. Learning large logic programs by going beyond entailment. IJCAI 2020
10. A. Cropper, S. Dumančić, and S. H. Muggleton. Turning 30: new ideas in inductive logic programming. IJCAI 2020
11. A. Cropper. Forgetting to learn logic programs. AAAI 2020
12. A. Cropper, R. Morel, and S. H. Muggleton. Learning higher-order programs through predicate invention. AAAI 2020
13. A. Cropper. Playgol: learning programs through play. IJCAI 2019
14. S. Tourret and A. Cropper. SLD-resolution reduction of second-order horn fragments. JELIA 2019
15. R. Morel, A. Cropper, and C. L. Ong. Typed meta-interpretive learning of logic programs. JELIA 2019
16. A. Cropper and S. Tourret. Derivation reduction of metarules in meta-interpretive learning. ILP 2018
17. A. Cropper and S. H. Muggleton. Learning higher-order logic programs through abstraction and invention. IJCAI 2016
18. A. Cropper. Logic-based inductive synthesis of efficient programs. IJCAI 2016
19. A. Cropper and S. H. Muggleton. Learning efficient logical robot strategies involving composable objects. IJCAI 2015
20. A. Cropper. Learning efficient logic programs. IJCAI 2015
21. A. Cropper, A. Tamaddoni-Nezhad, and S. H. Muggleton. Meta-interpretive learning of data transformation programs. ILP 2015
22. C. Farquhar, G. Grov, A. Cropper, S. Muggleton, and A. Bundy. Typed meta-interpretive learning for proof strategies. ILP 2015
23. A. Cropper and S. H. Muggleton. Can predicate invention compensate for incomplete background knowledge? SCAI 2015
24. A. Cropper and S. H. Muggleton. Logical minimisation of meta-rules within meta-interpretive learning. ILP 2014

Service

Tutorials

- Inductive logic programming: an introduction and recent advances AAAI 2023

Organisation

- Co-organiser Dagstuhl seminar *Approaches and Applications of Inductive Programming* 2021, 2023

Senior program committee

- IJCAI 2021

Program committee

- AAAI 2020-2024
- IJCAI 2019-2024
- ILP 2020-2022
- KR 2021
- ECAI 2020

Reviewer

- MLJ 2020-2023
- International journal of approximate reasoning 2023
- IJCAI surveys 2021, 2022
- POPL 2020
- StarAI 2020

Department service

- PhD/DPhil admissions 2022, 2023

College service

- Undergraduate admissions, Hertford College, University of Oxford 2021, 2022

Invited panellist

- AI discussion, Royal United Services Institute (RUSI), Oxford 2023
- AI panel, Morgan Stanley Global Investment Seminar, Venice 2023

Outreach

- Head, Hand, & Hertford, Hertford College, University of Oxford 2023
- UNIQ summer school, University of Oxford 2021
- Bebras Computing Challenge, University of Oxford 2019

Selected talks

- Learning programs by learning from failures (*journal track*) AAAI 2023
- The automatic computer scientist, University of South Carolina 2022
- Learning higher-order logic programs, LMU Munich 2021
- Inductive logic programming, UC San Diego 2021
- Learning programs by learning from failures, MIT 2020
- Inductive general game playing, KU Leuven 2019
- Playgol: learning programs through play, KU Leuven 2019
- Learning higher-order logic programs, KU Leuven 2019
- Inductive general game playing, MIT 2019

- Playgol: learning programs through play, MIT 2019
- Playgol: learning programs through play, Machine Intelligence 21 2019
- Inductive general game playing, Dagstuhl 2019
- Playgol: learning programs through play, Dagstuhl 2019
- Learning efficient logic programs, MIT 2018
- Learning efficient logic programs, Dagstuhl 2017
- Learning higher-order logic programs, Dagstuhl 2017
- Learning efficient logic programs, Machine Intelligence 20 2016
- Logic-based learning of programs, UC Berkeley 2016
- Metagol, Dagstuhl 2015
- Predicate invention in meta-interpretive learning, Wakayama University 2014