

John Lapinskas

Curriculum vitae and publication list

Education

- 2011–2014 **PhD (Combinatorics)**, *University of Birmingham*.
Supervised by Prof. Daniela Kühn and co-supervised by Prof. Deryk Osthus.
- 2010–2011 **M.Math**, *University of Cambridge*, *Distinction (ranked 22nd in year out of ~270)*.
Results for individual courses:
- Combinatorics: α .
 - Computable function theory: α .
 - Essay (titled "Hereditary Graph Properties"): $\alpha+$.
 - Extremal graph theory: α .
 - Quantum computation: α .
 - Quantum information theory: $\alpha+$.
 - Topics in analysis: α .
- 2007–2010 **B.A. (Mathematics)**, *University of Cambridge*, *First*.
Took the Mathematics with Computer Science first year option.

Work

- 2014–present **Research assistant**, *Department of Computer Science, University of Oxford*.
Working with Prof. Leslie Ann Goldberg.

Awards and Prizes

- 2017 IPEC 2017 best paper award
- 2016 Visiting postdoc at Simons Institute workshop on Counting Complexity and Phase Transitions
- 2016 ICALP 2016 best paper award (Track A)
- 2013 Ratcliffe Prize (awarded annually to a single Birmingham PhD student studying a science subject)
- 2011 Senior Burkill Prize in Mathematics
- 2010 Francis Gisborne Scholar in Mathematics
- 2009 Francis Gisborne Scholar in Mathematics
- 2008 Peterhouse Senior Scholar

Journal Publications

L.A. Goldberg, J. Lapinskas and D. Richerby, Phase transitions of the Moran process and algorithmic consequences, *Random Structures and Algorithms*, to appear.

72 Cedar Road – Oxford – OX2 9ED

☎ +44 7745 591 805 • ✉ lapinskas@cs.ox.ac.uk

- H. Dell and J. Lapinskas, Fine-grained reductions from approximate counting to decision, submitted.
- R. Curticapean, H. Dell, F. Fomin, L.A. Goldberg and J. Lapinskas, A fixed-parameter perspective on #BIS, *Algorithmica* (2019), 1–19.
- L.A. Goldberg, J. Lapinskas, J. Lengler, F. Meier, K. Panagiotou and P. Pfister, Asymptotically optimal amplifiers for the Moran process, *Theoretical Computer Science* **58** (2019), 73–93.
- A. Galanis, A. Göbel, L. A. Goldberg, J. Lapinskas and D. Richerby, Amplifiers for the Moran process, *Journal of the ACM* **64.1** (2017), 1–90.
- L. A. Goldberg, R. Gysel and J. Lapinskas, Approximately counting locally-optimal structures, *Journal of Computer and System Sciences* **82.6** (2016), 1144–1160.
- J. Cyman, T. Dzido, J. Lapinskas and A. Lo, On-line Ramsey numbers of paths and cycles, *Electronic Journal of Combinatorics* **22.1** (2015).
- D. Hefetz, D. Kühn, J. Lapinskas and D. Osthus, Optimal covers with Hamilton cycles in random graphs, *Combinatorica* **34.5** (2014), 573–596.
- D. Kühn, J. Lapinskas, D. Osthus and V. Patel, Proof of a conjecture of Thomassen on Hamilton cycles in highly connected tournaments, *Proceedings of the London Mathematical Society (Third Series)* **109.3** (2014), 733–762.
- D. Kühn, J. Lapinskas and D. Osthus, Optimal packings of Hamilton cycles in graphs of high minimum degree, *Combinatorics, Probability and Computing* **22** (2013), 394–416.

Conference Publications and Talks

- H. Dell, J. Lapinskas and K. Meeks, Approximately counting and sampling small witnesses using a colourful decision oracle, submitted.
- H. Dell and J. Lapinskas, Fine-grained reductions from approximate counting to decision, *The 50th ACM Symposium on Theory of Computing (STOC)*, 2018.
- R. Curticapean, H. Dell, F. Fomin, L.A. Goldberg and J. Lapinskas, A fixed-parameter perspective on #BIS, *The 12th International Symposium on Parameterized and Exact Computation (IPEC)*, 2017.
- A. Galanis, A. Göbel, L. A. Goldberg, J. Lapinskas and D. Richerby, Amplifiers for the Moran process, *The 43rd International Colloquium on Automata, Languages, and Programming (ICALP)*, 2016.
- L. A. Goldberg, R. Gysel and J. Lapinskas, Approximately counting locally-optimal structures, *The 42nd International Colloquium on Automata, Languages, and Programming (ICALP)*, 2015.
- D. Hefetz, D. Kühn, J. Lapinskas and D. Osthus, Optimal covers of random graphs with Hamilton cycles, *The 16th International Conference on Random Structures and Algorithms (RSA)*, 2013.

D. Kühn, J. Lapinskas, D. Osthus and V. Patel, A conjecture of Thomassen on Hamilton cycles in highly connected tournaments, *7th Czech-Slovak International Symposium on Graph Theory (CSGT), Combinatorics, Algorithms and Applications*, 2013.

D. Kühn, J. Lapinskas and D. Osthus, Optimal packings of Hamilton cycles in graphs of high minimum degree, *4th Polish Combinatorial Conference (PCC)*, 2012.

Other Talks and Seminars

Population structure and evolution: a survey of the graph Moran process. *Warwick seminar*, 2019.

The graph Moran process. *Cambridge seminar*, 2019.

Population structure and evolution: a survey of the graph Moran process. *Glasgow seminar*, 2018.

Fine-grained reductions from approximate counting to decision, *Dagstuhl Seminar 17341 (Computational Counting)*, 2017.

Quantum Meets Counting reading course (co-organiser with Heng Guo), 2016.

Amplifiers for the Moran process, *Berkeley-Simons combinatorics seminar*, 2016.

Amplifiers for the Moran process, *Saarbrücken seminar*, 2016.

The method of linkage structures in tournaments, *Oxford algorithms group seminar*, 2014.

An introduction to discharging, *Birmingham combinatorics reading group*, 2013.

Optimal packings of Hamilton cycles in graphs of high minimum degree, *Birmingham seminar*, 2013.

An introduction to flag algebras, *Birmingham combinatorics reading group*, 2013.

An introduction to transference theory, *Birmingham combinatorics reading group*, 2011.

Teaching

2017-18 Small group teaching and marking for *Probability and Computing*.

2016-17 Small group teaching and marking for *Graph Theory* and *Probability and Computing*.

2015-16 Small group teaching, marking, writing and administering take-home exam for *Probability and Computing*.

2013-14 Demonstrating and marking for *Linear Algebra and Programming* and *Metric Spaces*.

2012-13 Demonstrating and marking for *Real and Complex Variable Theory*, *Computability and Logic*, *Impact of Mathematics*, *Metric Spaces* and *Communication Theory*, small group teaching and marking for *Foundation and Abstraction*.

2011-12 Demonstrating and marking for *Foundation and Abstraction*, *Impact of Mathematics* and *Metric Spaces*.

Administrative and Outreach Work

- 2018 Interviewer for undergraduate admissions at Jesus College, Oxford.
- 2017 Gave an outreach talk titled *Population structure in evolution: does it matter?* at King's School, Canterbury.
- 2016 Assistant interviewer for undergraduate admissions at Keble College, Oxford.

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