

Sune K. Jakobsen

Personal data

Full name: Sune Kristian Jakobsen
Citizenship: Danish
Languages: Danish (native), English (fluent)
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Employment

Research Associate

Information Security Group, Department of Computer Science
University College London, April 2016 -
Advisor: Jens Groth

Education

Ph.D. in Mathematics

Queen Mary, University of London (QMUL), 2012-2016
Supervisors: Peter Keevash and Søren Riis

Note: Although my Ph.D. was formally in mathematics, most of my research and both my examiners were in computer science.

Graduate Student in Mathematics

University of Copenhagen (KU), 2011-2012
(Unfinished, because I got a Ph.D.-studentship at QMUL)

Bachelor in Mathematics

University of Copenhagen, 2008-2011
Bachelor Thesis: Barriers to proving $P \neq NP$
Advisors: Jakob Grue Simonsen, Søren Eilers

Higher Technical Examination (HTX)

Center for Erhverv og Uddannelse Storstrøm, 2005-2008

Honours and awards

Best Student Paper, Track A, ICALP 2014

Invited to the 1st Heidelberg Laureate Forum, 2013

Research studentship at Queen Mary, University of London, 2012

Third place in the danish part of the Nordic Collegiate Programming Contest (Programming Contest for teams of 3 persons), 2010

First Prize at the International Mathematics Competition for University Students (i.e. top 51), 2010

Silver medal at the International Mathematical Olympiad, 2008

Bronze medal at the International Mathematical Olympiad, 2007

Publications

Journal papers

- S. K. Jakobsen. Information Theoretical Cryptogenography. *Journal of Cryptology*, 2016, DOI 10.1007/s00145-016-9242-8 <http://arxiv.org/abs/1402.3125> (Available online, but not yet assigned to a journal issue).
- S. K. Jakobsen and J. G. Simonsen. Some Remarks on Real Numbers Induced by First-Order Spectra. *Notre Dame Journal of Formal Logic*, 2016.
- S. K. Jakobsen. Mutual information matrices are not always positive semi-definite, *IEEE Transactions on Information Theory*. Vol. 60 (5), 2014. <http://arxiv.org/abs/1307.6673>

Conference papers

- S. K. Jakobsen, Troels B. Sørensen and Vincent Conitzer. Timeability of Extensive-Form Games. *ITCS 2016*. <http://arxiv.org/abs/1502.03430>
- S. K. Jakobsen and Claudio Orlandi. How to Bootstrap Anonymous Communication. *ITCS 2016*. <http://arxiv.org/abs/1502.05273>
- S. K. Jakobsen. A numbers-on-foreheads game. *MFCS*, 2015. <http://arxiv.org/abs/1502.02849>
- S. K. Jakobsen. Information Theoretical Cryptogenography. *ICALP*, 2014. <http://arxiv.org/abs/1402.3125>
- J. Brody, D. Scheder, S. K. Jakobsen and P. Winkler. Cryptogenography. *Innovations in Theoretical Computer Science*, 2014

Talks given

Cryptogenography: Anonymity without trust This is a presentation of the main results in my PhD thesis. I have given variations of this talk on the following occasions: ESORICS (European Symposium on Research in Computer Security), 25/9-2015; ACE Seminar, UCL, 29/09-2016; Mathematical Sciences Seminar, Birkbeck, 05/10-2016.

How to Bootstrap Anonymous Communication I have presented variations of this talk on the following occasions: Postgraduate Research Day, QMUL 01/05-2015; ITCS (Innovations in Theoretical Computer Science), 25/07-2016.

Timeability of Extensive-Form Games I have presented variations of this talk on the following occasions: Theory Seminar, Aarhus University 19/11-2014; ITCS (Innovations in Theoretical Computer Science) 15/01-2016; GAMES (World Congress of the Game Theory Society) 25/07-2016.

A numbers-on-foreheads game I have presented variations of this talk on the following occasions: QuIPS (Queen Mary Internal Postgraduate Seminar), 05/11-2014; PCC (Postgraduate Combinatorial Conference), 13/04-2015; MFCS (International Symposium on Mathematical Foundations of Computer Science) 24/8-2015.

Information Theoretical Cryptogenography I have presented variations of this talk on the following occasions: QuIPS (Queen Mary Internal Postgraduate Seminar), 20/11-2013; QMUL/Warwick workshop, 17/03-2014; Theory Seminar QMUL, 24/06-2014; ICALP (International Colloquium on Automata, Languages, and Programming), 10/07-2014; DIMAP seminar, University of Warwick, 14/10-2014; Theory Seminar, Aarhus University, 27/11-2014.

Cryptogenography I have presented variations of this talk on the following occasions: PCC (Postgraduate Combinatorial Conference), 16/08-2013; ITCS (Innovations in Theoretical Computer Science), 12/01-2014.

Network coding and the entropy cone QuIPS (Queen Mary Internal Postgraduate Seminar), 27/03-2013.

Information inequalities QMUL and Warwick DIMAP PhD workshop, 06/03-2013.

Entropy, partitions, groups and association schemes 4 Queen Mary, Combinatorics Study Group, 02/11-2012.

**Conferences
attended/
attending**

GAMES 5th World Congress of the Game Theory Society, 24-28 July 2016, Maastricht, Netherlands

WEIS Workshop on the Economics of Information Security, 13-14 June 2016, Berkeley, California, USA

CSRBAI Colloquium Series on Robust and Beneficial AI, 27 May-18 June 2016, Berkeley, California, USA

ITCS 7th Innovations in Theoretical Computer Science, 14-16 January 2016, Cambridge, Massachusetts, USA

ESORICS 20th European Symposium on Research in Computer Security, 21-25 September 2015, Vienna, Austria

MFCS 40th International Symposium on Mathematical Foundations of Computer Science, 24-28 August 2015, Milano, Italy

PCC 24th Postgraduate Combinators Conference, 13-15 April 2015, QMUL, UK

Real World Crypto 7-9 January 2015, London, UK

Extremal Combinatorics 14-18 July 2014, Edinburgh, UK

ICALP International Colloquium on Automata, Languages, and Programming, 7-11 July 2014, Copenhagen, Denmark

BMC British Mathematical Colloquium, 7-10 April 2014, QMUL, UK

ITCS Innovations in Theoretical Computer Science, 12-14 January 2014, Princeton, NJ, US

1st Heidelberg Laureate Forum 22-27 September 2013, Heidelberg, Germany

PCC 23rd Postgraduate Combinators Conference, 14-16 August 2013, Royal Holloway, UK

Combinatorics, Algebra, and More 8-10 July 2013, QMUL, UK

Erdős Centennial 1-5 July 2013, Budapest, Hungary

WITMSE 4th Workshop on Information Theoretic Methods in Science and Engineering, 7-10 August 2011, Helsinki, Finland

ISIT The IEEE International Symposium on Information Theory, 31 July - 5 August 2011, Saint Petersburg, Russia

Teaching

Leading exercise classes: Going through exercises on the blackboard

Discrete Mathematics at KU. Fall 2011

Discrete Mathematical Structures at KU. Fall 2010

Teaching assistant: Helping students with homework. “(m)” indicates that I was also marking students scripts in that module.

Linear Algebra I (m) at QMUL, Fall 2015

Essential Mathematical Skills at QMUL, Fall 2015

Discrete Mathematics for pre-university students (m) at QMUL, Spring 2013 and 2015

Essential Mathematical Skills at QMUL, Fall 2014

Cryptography (m) at QMUL. Sprint 2014

Coding Theory (m) at QMUL. Fall 2013

Combinatorics at QMUL. Fall 2013

Engineering Mathematics II at QMUL. Fall 2012 and 2013

Linear Algebra at KU. Fall 2009

Visits

Aarhus University 16/11-2014 - 18/12-2014.

Misc.

Co-organising QuIPS (Queen Mary Internal Postgraduate Seminar) 2013-2014

Deputy leader for Danish mathematical competition team:

Baltic Way Mathematical Team Competition 2011, Germany

Baltic Way Mathematical Team Competition 2010, Iceland

International Mathematical Olympiad 2010, Kazakhstan