

# JOËL OUAKNINE

— Short CV —

January 2, 2017

**Year of birth:** 1972  
**Citizenships:** Canadian and French  
**Family:** Married, two children

## RESEARCH INTERESTS

**Foundations of Algorithmic Verification and Theoretical Computer Science;** in particular:

- Decision, control, and synthesis problems for continuous and discrete linear dynamical systems (using tools from number theory, Diophantine geometry, real algebraic geometry)
- Automated verification of real-time, probabilistic, and infinite-state systems (e.g. model-checking algorithms, synthesis problems, complexity)
- Logic and applications to verification
- Automated software analysis
- Concurrency

## EDUCATION

<b>Oxford University</b> Oxford, UK	<b>PhD, Computer Science</b>	<b>2001</b>
<b>McGill University</b> Montréal, Canada	<b>MSc, Mathematics</b> <b>BSc, Honours in Mathematics</b>	<b>1995</b> <b>1993</b>

## EMPLOYMENT

<b>Max Planck Institute for Software Systems</b> Saarbrücken, Germany	<b>Scientific Member &amp; Director</b>	<b>2016 – present</b>
<b>Saarland University</b> Saarbrücken, Germany	<b>Adjunct Professor of Computer Science</b>	<b>2016 – present</b>
<b>Oxford University</b> Oxford, UK	<b>Professorial Research Fellow</b> (part-time) <b>Full Professor of Computer Science</b> – Deputy Head of Department 2014 – 2016 <b>Reader<sup>1</sup> in Computer Science</b> <b>University Lecturer<sup>2</sup> in Computer Science</b> <b>Fellow<sup>3</sup> of St John’s College</b>	<b>2016 – present</b> <b>2010 – 2016</b> <b>2008 – 2010</b> <b>2004 – 2008</b> <b>2004 – present</b>
<b>Ecole Normale Supérieure</b> Cachan, France	<b>Invited Professor</b> (1-month appointment, twice)	<b>2006, 2008</b>
<b>Carnegie Mellon University</b> Pittsburgh, USA	<b>Postdoctoral Fellow</b> (Computer Science Department)	<b>2002 – 2004</b>
<b>Tulane University</b> New Orleans, USA	<b>Instructor</b> (Department of Mathematics)	<b>1999 – 2002</b>

<sup>1</sup>Tenure awarded July 2009. ‘Reader’ is roughly equivalent to Associate Professor in North America.

<sup>2</sup>‘University Lecturer’ is roughly equivalent to tenure-track Assistant Professor in North America.

<sup>3</sup>Emeritus Fellow since 2016.

## PUBLICATIONS

Over **100 papers** in peer-reviewed conferences and journals, including:  
**LICS/ICALP (21), CONCUR/FoSSaCS (12), CAV/TACAS (10), STOC/SODA (4)**

## AWARDS

1. **ERC Consolidator Grant, 2015–2020**
2. **Best Paper Award, ICALP 2014**
3. **Best Paper Award, CONCUR 2011**
4. **Roger Needham Award, 2010.** *£5000 annual prize, given by the British Computer Society, for “a distinguished research contribution in computer science by a UK-based researcher within 10 years of their PhD.”*
5. **EPSRC Leadership Fellowship, 2009–2014.** *5-year research grant, of total value over £1M, covering among others 100% of my salary and providing complete buy-out from teaching and administrative duties. (Only 17 Leadership Fellowships awarded in 2009 in the UK across all scientific areas covered by EPSRC (the Engineering and Physical Sciences Research Council), of which only 4 in Computer Science.)*
6. **Outstanding Teaching Award, Oxford University, 2008**
7. **Outstanding Teaching Award, Oxford University, 2007**

## INVITED SPEAKER AT INTERNATIONAL CONFERENCES, ETC.

1. **FoSSaCS:** 20th Int’l Conf. on Foundations of Software Science and Computation Structures, 2017
2. **EQINOCs:** Workshop on Entropy and Information in Computational Systems, 2016
3. **Heilbronn Annual Conference,** 2015
4. **FFM:** Conf. on Frontiers of Formal Methods, 2015
5. **Journées nationales du GDR IM,** Bordeaux, 2015
6. **TbiLLC:** 11th Int’l Tbilisi Symp. on Language, Logic and Computation, 2015
7. **London Mathematical Society BCS-FACS Annual Seminar,** 2014
8. **VTSA:** Summer School on Verification Technology, Systems & Applications, 2014
9. **GandALF:** 5th Int’l Symp. on Games, Automata, Logics and Formal Verification, 2014
10. **AISS:** Workshop on Algorithmics on Infinite State Systems, 2014
11. **SCSS:** 5th Int’l Symp. on Symbolic Computation in Software Science, 2013
12. **FroCoS:** 9th Int’l Symp. on Frontiers of Combining Systems, 2013
13. **FCT:** 19th Int’l Symp. on Fundamentals of Computation Theory, 2013
14. **LATA:** 7th Int’l Conf. on Language and Automata Theory and Applications, 2013
15. **RP:** 6th Int’l Workshop on Reachability Problems, 2012
16. **QMC:** ARTIST PhD School on Quantitative Model Checking, 2012
17. **Roger Needham Lecture,** The Royal Society, London, 2010
18. **ICALP:** 37th Int’l Coll. on Automata, Languages and Programming, 2010

19. **MFPS**: 26th Conf. on the Mathematical Foundations of Programming Semantics, 2010
20. **AVACS**: Spring School on Automatic Verification and Analysis of Complex Systems, 2010
21. **VECoS**: 3rd Int'l Workshop on Verification and Evaluation of Computer and Communication Systems, 2009
22. **FORMATS**: 6th Int'l Conf. on Formal Modelling and Analysis of Timed Systems, 2008
23. **QAPL**: 4th Workshop on Quantitative Aspects of Programming Languages, 2006

## SERVICE

1. **PC chair, LICS**: 32nd Annual ACM/IEEE Symp. on Logic in Computer Science, 2017
2. **Organiser, Bellairs Workshop** on Infinite-State Systems, Barbados, 2015
3. **PC co-chair and co-organiser, RP**: 8th Int'l Workshop on Reachability Problems, 2014
4. **Co-organiser, Dagstuhl Seminar** on Reachability Problems for Infinite-State, 2014
5. **PC chair, MFPS**: 27th Conf. on the Mathematical Foundations of Programming Semantics, 2011
6. **PC co-chair, FORMATS**: 7th Int'l Conf. on Formal Modelling and Analysis of Timed Systems, 2009
7. **PC member**, Highlights 16, MFCS 16, MFPS 16, DCPS 16, RP 15, RV 15, ICALP 15, MFPS 15, LATA 15, SCSS 14, MFPS 14, CSL-LICS 14, MFPS 13, WoLLIC 13, CAV 13, ESOP 13, QFM 12, CAV 12, MOVEP 12, VECoS 11, CONCUR 11, RTRTS 10, GPMFV 10, VECoS 10, FORMATS 10, MOVEP 10, EPEW 10, MFPS 09, QEST 09, STACS 09, FORMATS 08, SPIN 08, QEST 08, FORMATS 07, PAuL 07, CSL 07, QAPL 07, HSCC 07, EXPRESS 06, FORMATS 06, LICS 06, AVIS 04
8. **Associate Editor**, Journal of Computer and System Sciences, Elsevier

## RESEARCH GRANTS

1. **PI**, Consolidator Grant: ERC, *Analysis, Verification, and Synthesis of Infinite-State Systems*, 2015–2020. **EUR 1,835,000**
2. **Co-I**: EPSRC, UK (PI J. Worrell), *Counter Automata: Verification and Synthesis*, 2014–2017. **GBP 242,000**
3. **PI**: EPSRC, UK, *Graph-Theoretic Algorithms for Separation Logic*, 2012–2014. **GBP 196,000**
4. **PI**: The Leverhulme Trust, UK (Visiting Professor P. Schnoebelen), *Algorithmic Theory of Well-Structured Systems: Applications to Verification*, 2011–2012. **GBP 18,000**
5. **Co-I**: EPSRC, UK (PI D. Kroening), *Verification of Shared-Memory Concurrent Software*, 2009–2013. **GBP 560,000**
6. **PI**, Leadership Fellowship: EPSRC, UK, *Quantitative Verification: From Model Checking to Model Measuring*, 2009–2014. **GBP 1,019,000**
7. **PI**: EPSRC, UK, *Automated Verification of Probabilistic Programs*, 2009–2011. **GBP 360,000**
8. **Co-I**: EPSRC, UK, (PI B. Coecke), *Complexity and Decidability in Unconventional Computational Models*, 2008–2011. **GBP 180,000**
9. **PI**: EPSRC, UK, *Model-Checking Algorithms for Timed Systems*, 2007–2011. **GBP 135,000**
10. **Co-I**: EPSRC, UK (PI A. W. Roscoe), *CSP Model Checking: New Technology and Techniques*, 2007–2011. **GBP 715,000**
11. **Supervisor**, FP6 Marie Curie Intra-European Fellowship: European Commission (Fellow P. Bouyer), *Logical Languages for Embedded Systems*, 2006–2007. **EUR 47,000**

**SOFTWARE DEVELOPED**

1. **SLAP:** A static livelock analyser for CSP processes (now bundled within FDR), 2009–
2. **APEX:** A verification tool for probabilistic programs, 2007–
3. **MAGIC:** A model checker for sequential and concurrent C programs (implemented by S. Chaki), 2002–