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Born in Singapore; Singapore citizen. Married with one child. <sup>1</sup>

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## 1 Education

- **PhD (Computer Science)**. Imperial College of Science, Technology and Medicine, University of London, 1985 – 1988. Thesis title: *The Lazy Lambda Calculus: An Investigation into the Foundations of Functional Programming*. Supervisor: Prof. Samson Abramsky. Examiners: Prof. Gordon D. Plotkin and Dr. Simon Peyton Jones.
  - **Postgraduate Diploma in Computer Science (Distinction)**, Trinity College, University of Cambridge, 1984 – 1985. Dissertation title: *An Optimizing Compiler for Prolog*. Supervisor: Dr. Arthur C. Norman and Prof. Alan Mycroft.
  - **B.A. (Triple First-Class Honours, Mathematical Tripos)**, Trinity College, University of Cambridge, 1981 – 1984.
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## 2 Appointments

### 2.1 Current Appointments

- **Director of Graduate Studies**, Department of Computer Science, University of Oxford, 2011 - 2014.
- **Professor in Computer Science**, University of Oxford, since 2004.
- **Tutorial Fellow in Computer Science**, Merton College, Oxford, since 1994.

### 2.2 Past Appointments

- **Dean of Graduates**, Merton College, Oxford, 2003 – 2008.
- **Reader in Computer Science**, University of Oxford, 2002 – 2004.
- **University Lecturer in Computation**, University of Oxford. 1994 – 2002 (Awarded Tenure in 1998).
- **Lecturer in Computer Science**, St. John's College, Oxford, 1994 – 2004.
- **Prize Research Fellow**, Trinity College, Cambridge, UK. October 1988 – December 1995; Director of Studies in Computer Science, October 1992 – June 1993.
- **Lecturer**, Department of Information Systems and Computer Science, National University of Singapore, September 1990 – April 1996 (on leave of absence: May 1992 – April 1996).
- **National Service**: Basic Military Training and Officer Cadet Training (SAFTI), Dec 1980 – September 1981; Lieutenant, 3rd Division Artillery Headquarters, Singapore Armed Forces, December 1988 – September 1990. 2.5 years in toto. Total length of service: 2.5 years.
- **Research Assistant**, Alvey Flagship Project. Department of Computing, Imperial College of Science, Technology and Medicine, London, October 1986 – October 1988. Supervisor: Prof. John Darlington.

## 2.3 Visiting Positions

- **Resident Member**: Research Programme on Logic and Algorithms, Issac Newton Institute of Mathematical Sciences, University of Cambridge, 16 January – 29 April 2006.  
Research Programme on Semantics of Computation, Issac Newton Institute of Mathematical Sciences, University of Cambridge, July – December 1995.
  - **Visiting Professor**, School of Computing, National University of Singapore, 2004 – 2005.
  - **Visiting Consultant**, Computing Sciences Research Centre, Bell Laboratories, Murray Hill, New Jersey, USA, February – March 2001. Hosts: Dr. Jon Riecke and Dr. Anindya Basu.
  - **Visiting Researcher**, Centre for Mathematical Sciences, University of Cambridge, October – December 2000. Host: Prof. Martin Hyland.
  - **Visiting Professor**, Département de Mathématiques et d'Informatique, École Normale Supérieure, Paris, France, September 1996. Host: Dr. Pierre-Louis Curien.
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## 3 Awards

- **President of the Republic of Singapore Scholarship**, 1981; **Prime Minister's Book Prize**, 1980; **Overseas Merit Scholarship**, Public Service Commission, Republic of Singapore, 1981 – 1984.
  - **Prize Research Fellowship**, 1988 – 1994; **Senior Scholarship**, Trinity College, Cambridge 1982 – 1985.
  - **Sword Winner**, Field Artillery Officer Cadet Course, Singapore Armed Forces, December 1988 – June 1989.
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## 4 Research and Research Group

**Research Interests** Programming Languages and Systems, Verification, Semantics and Logic of Computation, Logic and Algorithms, Security, Algorithmic Game Theory.

I have worked in a wide range of areas in the **semantics and logic of computation**, including **lambda calculus**, **type theory**, **semantics of programming languages**, **linear logic** and **computational proof theory**. I have contributed to the development of **game semantics**, and its application to **compositional software model checking** and **program analysis**. More recently my work has focussed on **higher-order model checking**, a new branch of **algorithmic verification** that combines ideas and methods from semantics with automata-theoretic and allied techniques in automatic verification, with application to the verification of higher-order programs. I have also published in **concurrency**, **language-based security**, **algorithmic game theory**, **logic and computational complexity**, and **internet routing protocols**.

### 4.1 Postdoctoral Researchers Supervised and Research Fellows Hosted

- Dr. Takeshi Tsukada, *Game Semantics and Type Theory for Higher-Order Model Checking and Related Problems*, Japanese Society for the Promotion of Science Postdoctoral Fellowship for Research Abroad (1 September 2013 – 30 August 2015). Appointed to Assistant Professorship, Department of Computer Science, Graduate School of Information Science and Technology, University of Tokyo (from 1 April 2015).
- Dr. Robin Neatherway, *Higher-Order Model Checking for Verifying Haskell Programs*, EPSRC Impact Acceleration Account Award EP/K503769/1, (1 May – 30 November 2014). Currently Software Engineer, Semmler, Oxford.
- Dr. Steven Ramsay, *Type-directed Abstraction Refinement for Higher-Order Model Checking*, EPSRC EP/F036361/1 (May 2012 – April 2013).

- Dr. Bahareh Afshari, *Proof-Theoretic Methods for Model Checking Modal Mu-Calculus*, EPSRC EP/F036361/1 (November 2012 – April 2013).
- Dr. Anthony Widjaja Lin, EPSRC Postdoctoral Research Fellowship in Theoretical Computer Science, October 2011 - September 2013. Currently Assistant Professor, Yale-NUS College, Singapore.
- Dr. Matthew Hague, *Game Semantics, Recursion Schemes and Collapsible Pushdown Automata*, EPSRC EP/F036361/1 (May 2009 - September 2010). Currently EPSRC Early Career Fellow, and Lecturer, Royal Holloway, University of London.
- Dr. Max Schaefer, *Verification of Security Properties in Dynamic, Staged Languages*, EPSRC EP/F036361/1 (1 May – 31 August 2011). Currently Research Engineer, Semmler, Oxford.
- Dr. Adam Bakewell, *Observational Equivalence Model Checker*, EPSRC EP/C514645/1, August 2009 – February 2010.
- Dr. William Blum, *Game Semantics and Pushdown Automata*, EPSRC EP/C514645/1 (September – December 2008). Currently Senior Software Development Engineer, Microsoft, Seattle USA.
- Dr. Andrew Twigg, Junior Research Fellowship, St. John’s College, 2007 – 2011.
- Dr. Andrzej Murawski, *Algorithmic Game Semantics and its Applications*, EPSRC GR/R88861/01 (August 2002 – September 2005). Currently Associate Professor in Computer Science, University of Warwick.
- Dr. Dan Ghica, *Algorithmic Game Semantics and its Applications*, EPSRC GR/R88861/01 (August 2002 – September 2005). Currently Reader in Computer Science, University of Birmingham.
- Dr. Damian Sereni, *Centre for Metacomputation*, EPSRC Platform Grant EP/D037085, (2006 – 2009). Currently Engineering Manager, Facebook.
- Dr. Ralph Loader, Junior Research Fellowship, Merton College (October 1995 – September 1997).
- Dr. Guy McCusker, Junior Research Fellowship, St. John’s College, (October 1995 – September 1998). Currently Professor of Computer Science, University of Bath.
- Dr. Hanno Nickau, *Uniform Game Semantics for Computation and Reasoning*, EPSRC GR/L27787 (April 1997 – March 1999). Currently Departmental Lecturer in Computer Science, University of Oxford.
- Dr. Corina Cirstea, Junior Research Fellowship, St. John’s College, (October 1998 – September 2001). Currently University Lecturer in Computer Science, University of Southampton.
- Dr. Andrew Ker, Junior Research Fellowship, (University College, October 2000 – September 2003). Currently University Lecturer in Computer Science, University of Oxford.
- Dr. Ryu Hasegawa, (February 1994 – July 1997), *Systematic Programming Semantics*, EPSRC GR/J97355. Currently Associate Professor, Graduate School of Mathematics, University of Tokyo.

## 4.2 Research Visitors Hosted (4 Weeks or Longer)

- Professor Guoqiang Li, Institute of Software, Shanghai Jiaotong University, 20 July 2015 – 19 July 2016. China Scholarship Council Scholar.
- Mr. Mathias Sablé Meyer, École Normale Supérieure Cachan, Paris. 22 February – 23 July 2015.
- Prof. Roland Meyer, Technical University of Kaiserslautern. 1 February – 31 March 2015.
- Mr. Matthias Brugger, Technical University of Munich. Academic Year 2014 – 2015.
- Prof. Luigi Santocanale, Aix-Marseille Université. December 2014 (tentative).
- Prof. Neil D. Jones, Professor Emeritus, DIKU, University of Copenhagen, Denmark (1 February – 30 April 2004; 1 – 30 April 2012; 25 March – 21 April 2014); also Visiting Scholar, Merton College.
- Prof. Naoki Kobayashi, University of Tokyo (9–14 Nov 2008, 1-2 Nov 2010, 7–11 Nov 2011, and 13-15 March 2014).

- Mr. Robert Jakob, PhD Student (supervisor: Prof. Peter Thielman), University of Freiburg, Germany (3–31 March 2014).
- Mr. Yann Salmon, PhD Student (supervisors: Prof. Thomas Genet and Prof. Thomas Jensen), IRISA / INRIA, Université de Rennes 1 (20 January – 28 February 2014).
- Assoc. Prof. Andrzej Murawski, University of Warwick. Part-time visitor since 2012.
- Dr. Nikos Tzvelekos, University Lecturer, Royal Academy of Engineering Fellow and Lecturer, Queen Mary University of London (29 July - 31 August 2013).
- Mr. Charles Grellois, PhD Student (supervisor: Dr. Paul-André Melliès), ENS Cachan and Université Paris Diderot, Paris (1–31 July 2011; 22–28 October 2012; 27 July – 22 August 2013; 22 February - 1 March 2015).
- Mr. Alexis Goyet, PhD Student (supervisor: Dr. Pierre-Louis Curien), École Normale Supérieure and Université Paris Diderot, Paris (October 2012; 1 September – 30 November 2013).
- Ms Diana Fischer, PhD Student (supervisor: Prof. Erich Grädel), RWTH Aachen University, Germany (January – June 2012).
- Dr. Martin Avanzini, University of Innsbruck, Austria (November – December 2011).
- Mr. Takeshi Tsukada, PhD Student (supervisor: Prof. Naoki Kobayashi), Tohoku University and University of Tokyo (1 November 2011 – 31 January 2012).
- Ms Dulma Rodriguez, PhD Student (Supervisor: Prof. Martin Hofmann), Ludwig-Maximilian University, Munich (18 July 2011 – 12 August 2011).
- Mr. Denis Kuperburg, PhD Student (Supervisor: Dr. Thomas Colcombet), LIAFA, Université Paris Diderot, 1-28 February 2011.
- Dr. Luca Paolini, Department of Informatics, University of Torino, Italy (1 September 2009 – 31 March 2010).
- Prof. Chee Yap, Courant Institute, New York University (1 July 2009 – 31 August 2010).
- Prof. Alexander Rabinovich, Tel Aviv University, Israel (1 September 2009 – 31 March 2010).
- Dr. Ian Stark, School of Informatics, University of Edinburgh (1 September – 31 December 2003); also Visiting Research Fellow, Merton College.
- Prof. Kazushige Terui, Research Institute of Mathematical Sciences, University of Kyoto (March – September 2003).
- Dr. Klaus Aehlig, Ludwig Maximilian University, Munich (DAAD Postdoctoral Fellowship: 1 December 2003 – 30 November 2004).
- Prof. Pietro di Gianantonio, Department of Informatics, University of Udine, Italy (August – September 2001); also Visiting Scholar, Merton College.
- Prof. Harry Mairson, Department of Computer Science, Brandeis University, Boston, USA (August – September 2000).
- Prof. Herman R. Jervell, Department of Informatics, University of Oslo, Norway (October – December 1999).
- Prof. Thomas Streicher, Technical University of Darmstadt, Germany (1 March – 30 April 1997); also Visiting Research Fellow, Merton College.

### 4.3 Doctoral Students Graduated

1. Martin Lester, *Information Flow Analysis for a Dynamically Typed Language with Stage Metaprogramming*, University of Oxford DPhil, expected July 2015. Examiners: Prof. Peter Thiemann and Prof. Michael Benedikt.
2. Jonathan Kochems, *Decidable Models of Recursive Asynchronous Concurrency*, University of Oxford DPhil, April 2015. Examiners: Prof. Rupak Majumdar and Prof. James Worrell.
3. Chang Yan, *A Computational Game-Theoretic Study of Reputation*, University of Oxford DPhil Thesis, Trinity Term 2014. Co-supervised by Prof. John Quah. Examiners: Prof. Angel Sánchez and Prof. Michael Wooldridge.

4. Robin Neatherway, *Higher-Order Model Checking with Traversals*, University of Oxford DPhil Thesis, Trinity Term 2014. Examiners: Dr. Dan Ghica and Prof. Daniel Kröning. First appointment: EPSRC-funded postdoctoral researcher, University of Oxford.
5. Steven Ramsay, *Intersection Types and Higher-Order Model Checking*, University of Oxford DPhil Thesis, Hilary Term 2014. Examiners: Prof. Martin Hofmann and Dr. Hongseok Yang. First appointment: EPSRC-funded postdoctoral researcher, University of Warwick.
6. Michael Vanden Boom, *Weak Cost Automata over Infinite Trees*, University of Oxford DPhil Thesis, 2012. Examiners: Prof. Mikołaj Bojanczyk and Prof. Michael Benedikt. Currently Research Fellow, Department of Computer Science, University of Oxford.
7. David Hopkins, *Game Semantics Based Equivalence Checking of Higher-Order Functions*, University of Oxford DPhil Thesis, 2012. Examiners: Prof. Guy McCusker and Dr. Hongseok Yang. Currently Software Engineer, Ensoft Limited, London.
8. Christopher Broadbent, *On Collapsible Pushdown Automata, their Graphs and the Power of Links*, University of Oxford DPhil Thesis, 2011. Examiners: Prof. Colin Stirling and Prof. Joel Ouaknine. First employment: Research Fellow, *Foundation Sciences Mathématiques de Paris*; currently Alexander von Humboldt Foundation Research Fellow, Technical University of Munich.
9. Yong Xie, *Game Composition, an Adjustable Commitment Folk Theorem, and Peer-to-peer Systems*, University of Oxford DPhil Thesis, 2010. Examiners: Prof. Michael Wooldridge and Dr. Alexandru Baltag. First employment: Quantitative Analyst, Wadhvani Asset Management, London.
10. Matthew Hague, *Saturation Methods for Global Model-Checking Pushdown Systems*, University of Oxford DPhil Thesis, Hilary Term 2009. Examiners: Prof. Javier Esparza and Prof. James Worrell. Currently EPSRC Early Career Fellow, and Lecturer in Computer Science, Royal Holloway University of London.
11. Sam Sanjabi, *A Semantics for Aspects by Compositional Translation*, University of Oxford DPhil Thesis, 2009. Examiners: Prof. Chris Hankin and Prof. Oege de Moor. Currently Advisory Software Engineer, Toronto, Canada.
12. William Blum, *The Safe Lambda Calculus*, University of Oxford DPhil Thesis, Michaelmas Term 2008. Examiners: Prof. Guy McCusker and Prof. Samson Abramsky. Currently Senior Engineering Manager, Microsoft, Seattle USA.
13. Jolie G. de Miranda, *Structures Generated by Higher-Order Grammars and the Safety Constraint*, University of Oxford DPhil Thesis, Trinity Term 2006. Examiners: Prof. Colin Stirling and Prof. Joel Ouaknine. First employment: Quantitative Analyst, Foreign Exchange, Royal Bank of Scotland.
14. William Greenland, *Game Semantics and Region Analysis*, University of Oxford DPhil Thesis, Trinity Term 2005. Currently Director of Instructional Analysis, University of Chicago.
15. Andrzej S. Murawski: *On Type-theoretic and Semantic Aspects of Polynomial-time Computability*, University of Oxford DPhil Thesis, Michaelmas Term 2001. Examiners: Prof. Martin Hyland and Prof. Samson Abramsky. Currently Associate Professor of Computer Science, University of Warwick.
16. Andrew D. Ker: *Innocent Game Models of Untyped Lambda Calculus*, University of Oxford DPhil Thesis, Hilary Term 2001. Currently University Lecturer in Computer Science, University of Oxford.
17. Corin S. Pitcher: *Functional Programming and Erratic Nondeterminism*, University of Oxford DPhil Thesis, Trinity Term 2001. Currently Associate Professor, De Paul University, Chicago.
18. Sula Ma, *An Object-based Algebraic Specification Environment*, University of Oxford DPhil Thesis, Trinity Term 2001.
19. Corina Cirstea: *Algebras and Co-algebras for Objects*, (Co-supervised by Dr. Grant Malcolm) University of Oxford DPhil Thesis, 2000. Currently Lecturer in Computer Science, University of Southampton.
20. Dominic Hughes: *Game Models of Polymorphism and Parametricity*, University of Oxford DPhil Thesis, 2000. First employment: Research Fellow, Stanford University, USA.
21. Charles A. Stewart: *On the Formula-as-Type Correspondence of Classical Proofs*, University of Oxford DPhil Thesis, 2000. First employment: Research Fellow, Artificial Intelligence Institute, Technical University of Dresden.

22. Thong-Wei Koh: *Internal Languages for \*-Autonomous Categories*, University of Oxford DPhil Thesis, 1998. Currently Founding Partner, Kinetic Laboratory, Chicago.

#### 4.4 Current Doctoral Students:

1. Emanuele D’Osualdo, *Automatic Verification of Actor-style Functional Concurrency*, University of Oxford DPhil candidate since October 2010.
2. David Landsberg, *Counterfactuals and Verification*, University of Oxford DPhil candidate since October 2010. Co-supervised by Prof. Daniel Kröning.
3. Lihao Liang, *Verification of Interrupt-driven Software*, University of Oxford DPhil candidate since October 2010. Co-supervised by Prof. Daniel Kröning and Prof. Tom Melham.
4. Conrad Cotton-Barratt, *Weak and Nested Class Memory Automata and Program Verification*, University of Oxford DPhil candidate since October 2012. Co-supervised by Dr. Andrzej Murawski.
5. Egor Ivanovski, *Complexity of Computing Nash Equilibria of Boolean Games*, University of Oxford DPhil candidate since October 2012.
6. Marcelo de Sousa, *Unfoldings and Partial Order Reductions*, University of Oxford DPhil candidate since January 2013. Co-supervised by Prof. Daniel Kröning.
7. Charles Grelois, *Indexed Linear Logic and Higher-Order Model Checking*, since October 2012. Université Paris Diderot PhD candidate since October 2012. Co-supervised by Dr. Paul-André Mellès.
8. Jennifer Jochems, *Topics in Compositional Higher-Order Model Checking*, starting October 2015.
9. Mario Alvarez Picallo, *Modal Type Theory and Multi-staged Programming*, starting October 2015.

#### 4.5 Software

- **Preface** (with Steven Ramsay and Robin Neatherway, POPL 2014): A prototype implementation of a fixed-parameter polynomial time higher-order model checking algorithm, based on a novel, type-directed form of abstraction refinement. Preface readily scales to recursion schemes of several thousand rules, well beyond the capabilities of current state-of-the-art higher-order model checkers. Web interface: <http://mjolnir.cs.ox.ac.uk/web/preface/>
- **Soter** (with Emanuele D’Osualdo and Jonathan Kochems, SAS 2013): A tool that verifies coverability properties of (a substantial fragment of) Erlang by first performing an abstract interpretation, followed by Petri Net model checking as a back-end implemented by the BFC tool. Web interface: <http://mjolnir.cs.ox.ac.uk/soter/>
- **TravMC** (with Robin Neatherway, ICFP 2012 and SPIN 2014): A prototype implementation of a higher-order model checking algorithm based on the fully abstract game semantics of recursion schemes, but specified as a goal-directed approach to intersection type inference. See <http://mjolnir.cs.ox.ac.uk/web/> for the tool HORSC, and the extension to alternating parity tree automata, TravMC2.
- **Homer** (with David Hopkins, CAV 2009): An implementation of an observational equivalence model checker for Reynold’s Idealized Algol using game semantics by reduction to the equivalence of visibly pushdown automata.
- **Hector** (with David Hopkins and Andrzej Murawski, ICALP 2011 and CAV 2012): This is an implementation of an algorithm that decides observational equivalence of a fragment of RML—a canonical restriction of Standard ML to ground-type references—by reduction to the equivalence of visibly pushdown automata.

#### 4.6 Patent

*Method and apparatus for exchanging routing information within an autonomous system in a packet-based data network* (with Basu, A. and Rasala, A. and Shepherd, F. and Wilfong, G.; SIGCOMM 2002), US Patent US7180864 B2, 20 February 2007. <http://www.google.com/patents/US7180864>

## 4.7 Research Grants as PI or co-PI

- EPSRC GR/J97355 *Systematic Programming Semantics* (PI), £104,452, February 1994 – July 1996.
- EPSRC GR/L27787 *Uniform Game Semantics for Computation and Reasoning* (PI), £126,407 (+ £146,989 at University of Cambridge), April 1997 – March 1999.
- Esprit Working Group 26142 APPSEM: Applied Semantics; partners (co-PI): Aarhus, Cambridge, Chalmers, Copenhagen, Darmstadt, ENS, Paris, Edinburgh Genova INRIA, Pisa.
- Esprit TMR LINEAR: Linear Logic in Theoretical Computer Science (co-PI); partners: Bologna, Cambridge, Edinburgh, Lisbon, Marseille, Paris and Rome; 1997 – 1999.
- EU Keep-in-Touch Project 143 *Concurrent Functional Programming* (PI), 80,423 ECUs; partners: Imperial College, Nijmegen, Chalmers, Singapore; October 1994 – June 1998.
- EPSRC Visiting Research Fellowship *Control Operators, Classical Proofs and Domain Theory* (PI) £3000, March – April 1997.
- EPSRC GR/R88861/01 *Algorithmic Game Semantics and its Application* (co-PI), £319 022, August 2002 – September 2005.
- EPSRC EP/C514645/1 *Games Semantics and Pushdown Automata* (PI), £100 000, January 2005 – December 2008.
- EU Network of Excellence *Applied Semantics II* (co-PI), 2002 – 2005.
- EPSRC EP/D037085 Platform Grant: *Centre for Metacomputation* (co-PI), £431,107, 2006 – 2009.
- Microsoft PhD Scholarship (PI): *Verifying Properties of the ML Family of Languages*, 2010 – 2013.
- EPSRC EP/F036361/1 *Game semantics, recursion schemes and collapsible pushdown automata: a new approach to the algorithmics of infinite structures* (PI), £552,778, 2008 – 2012.
- Intel grant *Effective Validation of Firmware* (co-PI), 2010 – 2013, about \$1,000,000.
- EPSRC Impact Acceleration Account Award EP/K503769/1: *Higher-Order Model Checking for Verifying Haskell Programs*, 1 May - 30 November 2014
- EPSRC EP/M023974/1 *Compositional Higher-Order Model Checking*, £772,487, 1 July 2015 – 30 June 2019

## 4.8 Named Collaborator on International Research Grants

- *Fundamental Theory of Malware Detection*, CN¥ 3 million, National Natural Science Foundation, China, 2014-2019. PI: Prof. Zhenhua Duan, Xidian University, Xi'an.
- *Securify: A Compositional Approach to Building Security Verified System*, about S\$ 7 million, 2014-2019, Singapore National Research Foundation. PI: Prof. Thambipillai Srikanthan, School of Computer Engineering, Nanyang Technological University, Singapore.
- *Trustworthy Systems from Untrusted Components*, about S\$ 7 million, 2014-2019, Singapore National Research Foundation. PI: Prof. Abhik Roychoudhury, School of Computing, National University of Singapore.

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## 5 Invited Presentations

### 5.1 Conferences, Workshops and Instructional Meetings

1. (Invited Lecture) *Dagstuhl Seminar 16131: Language based verification tools for functional programs*, 28 March – 1 April 2016.



2. (Invited Lecture). *NII Shonan Seminar 063: Semantics and Verification of Object-Oriented Languages*, 21–25 September 2015, Shonan Village Center, Japan.
3. (Invited Lecture). Colloquium in honour of Ernst-Rüdiger Olderog’s 60th Birthday, 8–9 September 2015, Oldenburg, Germany.
4. (Invited Plenary Lecture). *30th Annual ACM/IEEE Symposium on Logic in Computer Science (LICS)*, 6–10 July 2015, Kyoto, Japan.
5. (Invited Lecture Series, 5 hours). *7th Summer School on Topology, Algebra, and Categories in Logic (TACL)*, 15–19 June 2015, University of Salerno, Fisciano Salerno, Italy.
6. (Invited Lecture). Annual Meeting, *IFIP Working Group 1.6: Rewriting*, 28 June 2015, Warsaw.
7. Strategies as Sheaves on Plays: A Fully Abstract Game Model for Nondeterministic  $\lambda$ -Calculus (Invited Lecture). Special Session, *International Workshop on Games in Logic and Programming Languages (GaLoP) – ETAPS 2015 Workshop*. 11-12 April 2015, Queen Mary University of London.
8. On Static Analysis of Resource-Bounded Pi-Calculus (Invited Lecture). *French-Chinese ANR-NSFC project Logical Approach to Novel Computational Paradigms (LOCALI)*, Second Workshop, 24-26 Nov 2014, Université Paris Diderot, Paris.
9. Higher-Order Model Checking: From Theory To Practice (Invited Plenary Lecture). *21st International Static Analysis Symposium (SAS 2014)*, 11–13 September 2014, Munich, Germany.
10. Intersection Types and Higher-Order Model Checking: Some Recent Progress (Invited Lecture). *7th Workshop on Intersection Types and Related Systems (ITRS 2014) – FLoC 2014 Workshop*, 18 July 2014, Vienna, Austria.
11. (Invited Lecture) *Dagstuhl Seminar 14232: Design and Synthesis from Components*, 2–6 June 2014 (Unable to attend because of family illness).
12. Introduction to Higher-Order Model Checking (Invited Lecture). *Special Session on Logic and Algorithms in Higher-Order Computation, North American Annual Meeting of the Association of Symbolic Logic*, University of Colorado, Boulder, USA, 19–22 May 2014.
13. Types, Games and Higher-Order Programs (Invited Plenary Lecture). *4th Annual Meeting Tsinghua Software Day (TSD 2014)*, 21–22 April 2014, Tsinghua University, Beijing, China.
14. Functions, Concurrency and Automatic Verification (Invited Lecture). *Workshop on Concurrency, Logic and Types, ENS Lyon – Labex MILYON Scientific Programme on Mathematical Structures of Computation*, 10–14 February 2014, Lyon, France.
15. Higher-Order Model Checking: From Semantics to Algorithmics (Invited Lecture). *A Scientific Meeting in Honour of Pierre-Louis Curien*, 9–11 September 2013, Venice, Italy.
16. *Summer School on Verification of Infinite-State Systems*, Laboratory for Basic Studies in Computing Science (BASICS), Shanghai Jiaotong University, China, 18–23 August 2013 (Invitation declined because of prior commitment).
17. Higher-Order Model Checking (Invited Plenary Lecture Series, 3 Hours). *Annual Summer Meeting of the Association of Symbolic Logic, Logic Colloquium*, 22–27 June 2013, Évora, Portugal.
18. Two-Level Game Semantics and Intersection Types. *A Conference in Honour of Samson Abramsky, on the Occasion of His 60th Birthday*, University of Oxford, 28–30 May 2013.
19. Recursion Schemes and Pattern Matching (Invited Lecture). *Dagstuhl Seminar 13192: Tree Transducers and Formal Methods*, 5–8 May 2013.
20. Recursion Schemes, Collapsible Pushdown Automata and Higher-Order Model Checking (Invited Lecture Series, 3 Hours). *7th International Conference on Language and Automata Theory and Applications (LATA 2013)*, 2–5 April 2013, Bilbao, Spain.
21. Introduction to Higher-Order Model Checking (Invited Lecture Series, 4 Hours). *18th Estonian Winter School in Computer Science (EWSCS 2012)*, 3-8 March 2013, Palmse, Estonia.

22. Verifying Actor-style Message-Passing Concurrency Automatically (Invited Plenary Lecture). *9th International Conference on Theoretical Aspects of Computing (ICTAC 2012)*, 24–27 September 2012, Bangalore, India.
23. Higher-Order Model Checking: From Theory To Application (Invited Lecture). Annual Workshop, *ESF Networking Programme on Games for Design and Verification (GAMES)*, Napoli, Italy, 7–12 September 2012.
24. Two-Level Game Semantics and Intersection Types (Invited Plenary Lecture). *28th Conference on the Mathematical Foundations of Programming Semantics (MFPS 2012)* University of Bath, UK, 6–9 June 2012.
25. Recursion Schemes, Tree Automata and Higher-Order Model Checking (Invited Lecture). *1st International Workshop on Trends in Tree Automata and Tree Transducers (TTATT 2012)* – RTA 2012 Workshop, 2 June 2012, Nagoya, Japan.
26. Higher-Order Model Checking (Invited Lecture). *8th Workshop on Fixpoints in Computer Science (FICS 2012)* – ETAPS 2012 Workshop, 24 March 2012, Tallinn, Estonia.
27. (Invited Lecture and Panel Discussion Chair). *Research Programme on Logic and Interaction*, Centre International de Rencontres Mathématiques, Luminy, France, 6–10 February 2012.
28. Recursion Schemes, Collapsible Pushdown Automata, and the Model Checking of Higher-Order Computation. *Shonan Meeting Seminar 005: Automated Techniques for Higher-Order Program Verification*, Shonan, Japan, 22–27 September 2011.
29. Games, Recursion Schemes and Semantics (Invited Lecture Series, 3 Hours). *38th Ecole de Printemps d’Informatique Théorique: GAMES*, 23–27 May 2011, Carcans-Maubuisson, France.
30. Model Checking and Higher-Order Computation (Invited Plenary Lecture). *Annual Meeting of the British Logic Colloquium 2010 (BLC 2010)*, School of Computer Science, University of Birmingham, 2–4 September 2010.
31. Verifying Liveness Properties of Higher-Order Programs (Invited Lecture). *Dagstuhl Seminar 10351: Modelling, Controlling and Reasoning About States*, 28 August – 3 September 2010.
32. *Dagstuhl Seminar 10252: Game Semantics and Program Verification*, 21–25 June 2010 (Invitation Declined).
33. Recursion Schemes and Collapsible Pushdown Automata (Invited Lecture). *Workshop on Higher-Order Recursion Schemes and Pushdown Automata*, 10–12 March 2010, Université Paris Diderot, Paris, France.
34. Recursion Schemes and the Model Checking of Higher-Order Functional Programs (Invited Plenary Lecture). *22nd Nordic Workshop on Programming Theory (NWPT 2010)*, 10–12 November 2010, Åbo Akademi University, Turku, Finland.
35. Game Semantics and Compositional Equivalence Checking of Imperative Programs (Invited Plenary Lecture). *Annual Intel Symposium on VLSI CAD and Validation*, 8 September 2009, Technion, Haifa, Israel.
36. Model Checking Higher-Order Computation (Invited Lecture Series, 5 Hours). *Advanced Study Institute, NATO Science for Peace and Security Programme, Marktoberdorf Summer School: Logics and Languages for Reliability and Security*, 4–16 August 2009.
37. Some Flavours of Games in Computation (Invited Plenary Lecture). *Conference on Game Theory and Applications*, 4–8 May 2009, Centre International de Rencontres Mathématiques, Luminy, France.
38. Recursion Schemes, Types and Model Checking Higher-Order Programs (Invited Lecture). *SNDS UK-Israel Workshop on Verification of Infinite-State Systems*, 10–14 May 2009, Tel Aviv University, Israel.
39. Model Checking Multithreaded Programs: An Automata-Theoretic Approach (Invited Lecture). *IFIP Working Group 2.2 Annual Meeting*, 12–14 September 2008, Torino, Italy.
40. Verification of Higher-Order Computation: A Game-Semantic Approach (Invited Plenary Lecture). *5th Annual Conference on Theory and Applications of Models of Computation (TAMC 2008)*, Xi’an, China, 25–29 April 2008.
41. Verification of Higher-Order Computation: A Game-Semantic Approach (Invited Unifying Plenary Lecture). *European Joint Conference on Theory and Practice of Software (ETAPS 2008)*, Budapest, Hungary, Mar – 6 April 2008.

42. Global Model Checking of Infinite Trees (Invited Lecture). *Dagstuhl Seminar 07441: Algorithmic-Logical Theory of Infinite Structures*, 28 October – 2 November 2007.
43. Verification of Higher Order Computation: A Semantic Approach (Invited Lecture). Annual Meeting, *IFIP Working Group 2.2*, Nancy, France, 17–19 September 2007.
44. Verification of Infinite Structures: A Semantic Approach (Invited Lecture). *9th International Workshop on Verification of Infinite-State Systems* (INFINITY 2007) – CONCUR 2007 Workshop, Lisbon, Portugal, 8 September 2007.
45. Hierarchies of Infinite Structures Generated by Pushdown Automata and Recursion Schemes (Invited Plenary Lecture). *32nd International Symposium on Mathematical Foundations of Computer Science* (MFCS 2007), 26–31 August 2007, Český Krumlov, Czech Republic.
46. *Dagstuhl Seminar 06411: Specification, Verification and Test of Open Systems*, 8–13 October 2006 (Invitation Declined).
47. Some Results on a Game-Semantic Approach to Verifying Finitely-Presentable Infinite Structures (Invited Plenary Lecture). *20th Annual Meeting of the European Association of Computer Science Logic* (CSL 2006), Szeged, Hungary, 25–29 September 2006.
48. A Game-Semantic Approach to Infinite Structures (Invited Lecture). <http://archive-org.com/page/1693134/2013-03-21/http://www.easychair.org/FLoC-06/GALOP.html> *Workshop on Games for Logic and Programming Languages* (GaLoP 2006), Seattle, 10–11 August 2006.
49. Infinite Trees, Higher-Order Recursion Schemes and Game Semantics (Invited Lecture Series, 3 Hours). [http://epit.pps.univ-paris-diderot.fr/34th Annual Spring School in Theoretical Computer Science: Games in Semantics and Verification](http://epit.pps.univ-paris-diderot.fr/34th%20Annual%20Spring%20School%20in%20Theoretical%20Computer%20Science%20-%20Games%20in%20Semantics%20and%20Verification), Ile de Re, France, 28 May – 2 June 2006.
50. Game Semantics (Invited Lecture Series, 4 hours). *Midlands Graduate School on the Mathematical Foundations of Computing*, 8–12 April 2006.
51. Game Semantics and Higher-Order Pushdown Automata with Links (Invited Lecture). *Semantics and Games Workshop, Geometry of Computation 2006* (GEOCAL 2006), Centre International de Rencontres Mathématiques, Luminy, France 20–24 February 2006.
52. Game Semantics and its Algorithmic Applications (Invited Lecture Series, 5 hours). *Programme on Logic and Algorithms*, Isaac Newton Institute for Mathematical Sciences, Cambridge, February 2006.
53. Game Semantics (Invited Lecture Series, 5 Hours). *MATHLOGAPS Training Workshop*, EU Early Stage Research Training Site in Mathematical Logic and Applications, 5–9 September 2005, Fischbachau, Germany.
54. Game Semantics and Software Model Checking (Invited Lecture). *IFIP Working Group 2.2 Annual Meeting*, Skagen, Denmark, 31 Aug – 3 September 2005.
55. *Dagstuhl Seminar 05241: Synthesis and Planning*, 12–17 June 2005 (Invitation declined).
56. Higher-Order Recursion Schemes, Infinite Trees and Decidability (Invited Lecture). *7th International Workshop on Logic and Computational Complexity* (LCC 2005) – LICS 2005 Workshop, Chicago, 24–25 June 2005.
57. Classifying Decidable fragments of Idealized Algol (Invited Lecture). *Games for Logic and Programming Languages* (GaLoP 2005) – ETAPS 2005 Workshop, Edinburgh, 2–3 April 2005.
58. Games and Semantics (Invited Lecture Series, 3 Hours). *Spring School on Infinite Games and their Applications*, EU Research Training Network *Games and Automata for Synthesis and Validation*, Bonn, 15 – 19 March 2005.
59. Idealized Algol with Ground Recursion and DPDA Equivalence (Invited Lecture). Workshop on Games in Design and Verification – CAV 2004 Workshop, Boston, Massachusetts, USA, 18 July 2004.
60. Game Semantics and Its Application (Invited Lecture Series, 5 hours). *ICCL Summer School on Proof Theory and Automated Theorem Proving*, Technische Universität Dresden, 14 – 26, June 2004.
61. Game-based Algorithm for Deciding Observational Equivalence (Invited Plenary Lecture). *20th Conference on Mathematical Foundations of Programming Semantics* (MFPS 2004), Pittsburgh, USA, 23–26 May 2004.

62. Pushdown Hierarchies and the Safety Constraint (Invited Lecture). *11th Workshop on Logic, Language, Information and Computation* (WoLLIC 2004), Paris, France, July 2004.
63. Game Semantics: From Structures to Algorithmics (Invited Lecture). *EU TMR Network of Excellence GAMES Annual Meeting 2003*, Vienna, Austria, 30 August – 2 September 2003.
64. *Fields Institute Workshop on Game Semantics*, Ottawa, Canada, 17 June 2003 (Invitation declined because of prior commitment).
65. Evolving Games and Essential Nets for Affine Polymorphism (Invited Lecture). *Workshop on Linear Logic in Computer Science, Mathematics and Philosophy*, Rome, Italy, February 2003.
66. Model Checking Algol-like Languages using Game Semantics (Invited Plenary Lecture). *22nd International Conference on Foundations of Software Technology and Theoretical Computer Science* (FSTTCS 2002), December 2002, Kanpur, India.
67. (Invited Lecture and Participant). *Logic and Interaction Weeks (28 January – 1 March 2002)*, Centre International de Rencontres Mathématiques, Luminy, France, February 2002.
68. Game Semantics and Memory Management (Invited Lecture). *International Workshop on Full Abstraction and Full Completeness – LICS 2001 Workshop*, Boston, Massachusetts, USA, June 2001.
69. A Linear-time Algorithm for Deciding Multiplicative Linear Logic (Invited Lecture). *Oxford-Microsoft Symposium in Honour of Sir Tony Hoare*, August 1999, University of Oxford.
70. A Linear-Time Algorithm for Verifying MLL Proof Nets via Lamarche’s Essential Nets (Invited Lecture). *Dagstuhl Seminar 99341: Linear Logic and its Applications*, 22–27 August 1999.
71. Modified Realizability Topos and an Application to Normalisation (Invited Lecture). *Workshop on Realizability Semantics and Applications – FLoC 1999 Workshop*, 30 June – 1 July 1999, Trento, Italy.
72. Correspondence between Denotational and Operational Semantics (Invited Lecture Series, 6 Hours). *EEF Summer Summer School in Semantics of Computation*, 3–7 May 1999, Basic Research Institute in Computer Science, University of Aarhus, Denmark.
73. A Model for Complexity Analysis of Higher-Type Sequential Computable Functional (Invited Lecture). *Dagstuhl Seminar: Improvements, Complexity and Meanings of Programs*, 8–12 June 1998. <http://www.diku.dk/users/neil/9823Plan>
74. Game Partial Combinatory Algebras, Almost Everywhere Copycat Strategies and the Longley Conjecture (Invited Lecture). *Dagstuhl Seminar 98191: Domain Theory and its Applications*, 4–8 May 1998.
75. Game Semantics (Invited Plenary Lecture). *British Colloquium on Theoretical Computer Science (BCTCS 1998)*, University of St. Andrews, Scotland, 31 March – 2 April 1998.
76. Continuation Semantics for Call-By-Value Lambda-Mu Calculus (Invited Lecture Series, 3 Hours). *Japan Mathematical Society International Workshop on Theories of Types and Proofs – TACS 2006 Workshop*, Tokyo Institute of Technology, Tokyo, Japan, 8–18 September 1997.
77. Game Semantics for Classical Proofs (Invited Lecture), *Imperial College Annual Workshop on Theory and Formal Methods in Computing*, Christ Church College, Oxford, April 1996
78. A Game Model of Classical Proofs (Invited Lecture), *Third Seminar on Algebra, Logic and Geometry in Informatics*, University of Tokyo, Japan, 3 April 1996.
79. A Semantic View of Classical Proofs: Type-Theoretic, Categorical and Denotational Characterizations (Invited Plenary Lecture). *International Conference on Linear Logic*, Keio University, Tokyo, March 1996.
80. Game Semantics (Invited Lecture and Panelist). *BCS Formal Aspects in Computer Science Workshop on Semantics*, London, 19–20 December 1995.
81. Dialogue Games and Semantics of Proofs in Classical Logic (Invited Lecture). *International Workshop on Games, Processes and Logic*, Issac Newton Institute for Mathematical Sciences, Cambridge, 6–10 November 1995.



82. Dialogue Games, Pi-Calculus and PCF (Invited Lecture). *International Conference on Advances in Type Systems for Computing*, Issac Newton Institute for Mathematical Sciences, Cambridge, 14–18 August 1995.
83. What is a Model of PCF? (Invited Lecture). *Workshop on Full Abstraction for PCF and Related Languages*, Basic Research Institute in Computer Science, University of Aarhus, Denmark, 18–28 April 1995.
84. Dialogue Games and Innocent Strategies (Invited Lecture). *Dutch Lambda Calculus Inter-City Colloquium*, Utrecht, The Netherlands, February 1994.
85. Game Semantics and the Full Abstraction Problem for PCF (Invited Lecture). *Corrado Böhm Festschrift Conference*, University of Rome, Italy, December 1993.
86. Fair Games are Fully Complete for Multiplicative Linear Logic without the MIX-Rule (Invited Lecturer), *Second ESPRIT BRA Workshop on Categorical Logic in Computer Science*, Paris, France, October 1993.
87. Fairness and Fully Complete Game Models for Multiplicative Linear Logic (Invited Lecture). *Dagstuhl Seminar 9329: Interactions between Category Theory and Computer Science*, 19–23 July 1993.
88. Nondeterminism in a Functional Setting (Invited Lecture), *First ESPRIT BRA Workshop on Concurrency and Functions: Evaluation and Reduction*, INRIA, Sophia-Antipolis, France, January 1993.
89. Modified Realizability Topos and Strong Normalization Proofs (Invited Lecture). *European Summer School in Logic, Language and Information (ESSLI 1992)* August 1992, University of Essex.

## 5.2 University Colloquia and Seminars

I have been invited to lecture at the following universities and research institutes:

- 2015:** University of Birmingham (January)
- 2014:** Institute of Software Chinese Academy of Sciences, Beijing (April) [http://www.is.cas.cn/xwzx/kydt/201404/t20140425\\_4101516.html](http://www.is.cas.cn/xwzx/kydt/201404/t20140425_4101516.html); Institute for Informatics, University of Innsbruck, Austria (October); Queen Mary University of London (November); School of Computing, National University of Singapore (15 December); College of Engineering, Nanyang Technological University (December)
- 2011:** Nanyang Technological University, Singapore (August); National University of Singapore (August); University of Electronic Science and Technology at Xi'an, China (September) <http://oice.xidian.edu.cn/html/news/notice/2011/0831/1442.html>
- 2010:** University of Turin, Italy (August); University of Edinburgh (August); University of Swansea (October)
- 2009:** University of California Santa Cruz (August); National University of Singapore (August)
- 2008:** University of Liverpool (February); Institute of Software Chinese Academy of Sciences, Beijing (April); University of Electronic Science and Technology at Xi'an, China (April); Stanford University (August); Durham University (December)
- 2007:** University of Birmingham (November)
- 2006:** University of Warwick (April)
- 2005:** National University of Singapore (January); Manchester University (April); National University of Singapore (July); University of Cambridge (October); École Normale Supérieure, Paris, France (November); Université Paris Diderot, Paris, France (November); University of Edinburgh (November)
- 2003:** University of Edinburgh (June); National University of Singapore (July); University of Birmingham (October)
- 2002:** IIT Kanpur, India (December); IIT Delhi, India (December)
- 2001:** Queen Mary University of London (January); Game Semantics and Region Analysis (Invited Seminar). Programming Research Laboratory, Korea Advanced Institute of Science and Technology (KAIST), Korea (27–30 May); Institute of Information Sciences, Academia Sinica, Taiwan (December)
- 2000:** Boston University, USA (September); National University of Singapore (December)

- 1999:** Leicester University (September)
- 1998:** University of Edinburgh (February); Glasgow University (February); Swansea University (March)
- 1997:** University of Birmingham (June)
- 1996:** National University of Singapore (March); Keio University, Tokyo, Japan (April); University of Warwick (May); University of Tokyo (April); École Normale Supérieure, Paris (September); Université Paris Diderot, Paris, France (September);
- 1995:** University of Pennsylvania, USA (February); Leeds University (November)
- 1994:** CWI Amsterdam, The Netherlands (February); Chalmers University of Technology, Göteborg, Sweden (May); Imperial College, London (November)
- 1993:** INRIA Sophia-Antipolis, France (January); Utrecht University, The Netherlands (March); University of Edinburgh (May); University of Cambridge (October); University of Sussex (November)
- 1992:** University of Essex (July); European Computer-Industry Research Centre, Munich (July); Glasgow University (August); University of Edinburgh (August 1992)
- 1988:** University of Cambridge (July); University of Sussex (July); Carnegie-Mellon University, USA (October); Cornell University, USA (October); SUNY Stony Brook, USA (October); Macquarie University, Australia (November); Monash University, Australia (November); Sydney University, Australia (November)
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## 6 Publications

### Book Edited, Chapters in Books and Thesis

1. C.-H. L. Ong. *The Lazy Lambda Calculus: An Investigation into the Foundations of Functional Programming*. PhD thesis, University of London, 1988. Also Prize Fellowship Dissertation, Trinity College, Cambridge.
2. C.-H. L. Ong. Correspondence between operational and denotational semantics. In S. Abramsky, D. Gabbay, and T. S. E. Maibaum, editors, *Handbook of Logic in Computer Science, Vol 4*, pages 269 – 356. Oxford University Press, 1995.
3. A. S. Murawski and C.-H. L. Ong. A linear-time algorithm for verifying MLL proof nets via essential nets. In Davis, Roscoe, and Woodcock, editors, *Millennial Perspectives in Computer Science: Proceedings of the 1999 Oxford-Microsoft Symposium in Honour of Sir Tony Hoare*, pages 289 – 302. McMillan, 2000. Cornerstones of Computing.
4. C.-H. L. Ong (editor). *Proceedings 14th Annual Conference of European Association of Computer Science Logic, Oxford, UK (CSL'05)*. Springer-Verlag, 2005. LNCS 3634.
5. C.-H. L. Ong (editor). *Proceedings of IEEE Symposium on Logic in Computer Science*, Computer Society Press, 2007.
6. G. Ausiello, J. Karhumki, G. Mauri, C.-H. L. Ong, (editors). Fifth IFIP International Conference On Theoretical Computer Science – TCS 2008, IFIP 20th World Computer Congress, TC 1, Foundations of Computer Science, September 7-10, 2008, Milano, Italy Springer 2008
7. C.-H. L. Ong (editor). *Foundations of Software Science and Computational Structures, Proceedings of 13th International Conference, FOSSACS 2010*, held as Part of the Joint European Conferences on Theory and Practice of Software, ETAPS 2010, Paphos, Cyprus, March 20-28, 2010. Springer-Verlag, LNCS 6014. 2010.
8. C.-H. L. Ong (editor). *Typed Lambda Calculus and Application, Proceedings of 10th International Conference, TLCA 2011*, Novi Sad, Serbia, June, 2011. Springer-Verlag, LNCS-ARCoSS Volume 6690. 2011.
9. E. Grädel, C.-H. L. Ong and A. M. Pitts (editors). A Special Issue on Selected Papers of the Conference ‘Logic in Computer Science 2007’, Wroclaw, Poland, 2007. *Logical Methods in Computer Science*.

10. Zhenhua Duan and C.-H. L. Ong (editors). Proceedings of 5th IEEE International Conference on Theoretical Aspects of Software Engineering August 29 – 31, 2011, Xi'an, China.
11. C.-H. Luke Ong and Ruy J. G. B. de Queiroz (editors). *Logic, Language, Information and Computation: Proceedings of 19th International Workshop, WoLLIC 2012, Buenos Aires, Argentina, September 3-6, 2012*. LNCS Vol. 7456, Springer 2012.
12. Bob Coecke, Luke Ong and Prakash Panangaden (editors). *Computation, Logic, Games, and Quantum Foundations*, Springer LNCS Vol. 7860. 2013.

### Refereed Journal Papers

13. S. Abramsky and C.-H. L. Ong. Full abstraction in the Lazy Lambda Calculus. *Information and Computation*, 105:159 – 267, 1993.
14. J. M. E. Hyland and C.-H. L. Ong. On Full Abstraction for PCF: I. Models, observables and the full abstraction problem. *Information and Computation*, 163:285 – 325, 2000.
15. J. M. E. Hyland and C.-H. L. Ong. On Full Abstraction for PCF: II. Dialogue games and innocent strategies. *Information and Computation*, 163:325 – 359, 2000.
16. J. M. E. Hyland and C.-H. L. Ong. On Full Abstraction for PCF: III. A fully abstract and universal game model. *Information and Computation*, 163:359 – 408, 2000.
17. A. D. Ker, H. Nickau, and C.-H. L. Ong. Innocent game models of untyped  $\lambda$ -calculus. *Theoretical Computer Science*, 272:247 – 292, 2002.
18. A. D. Ker, H. Nickau, and C.-H. L. Ong. Adapting innocent game model for the Böhm tree lambda theory. *Theoretical Computer Science*, 308:333 – 366, 2003.
19. A. S. Murawski and C.-H. L. Ong. Exhausting Strategies, Joker Games and Full Completeness for IMLL with Unit. *Theoretical Computer Science*, 294:269 – 305, 2003.
20. A. S. Murawski and C.-H. L. Ong. On the interpretation of safe recursion in light logic. *Theoretical Computer Science*, 318:197 – 233, 2004.
21. C.-H. L. Ong. An approach to deciding observational equivalence of Algol-like languages. *Annals of Pure and Applied Logic*, 130:125 – 171, 2004.
22. C.-H. L. Ong and P. Di Gianantonio. Games characterizing Levy-Longo trees. *Theoretical Computer Science*, 312:121 – 142, 2004.
23. A. S. Murawski and C.-H. L. Ong. Fast verification of MLL proof nets via IMLL. *ACM Transactions on Computational Logic*, 7:473 – 498, 2006.
24. D. R. Ghica, A. S. Murawski, and C.-H. L. Ong. Syntactic control of concurrency. *Theoretical Computer Science*, 350:234 – 251, 2006.
25. M. Hague, C.-H. L. Ong. Symbolic Backwards-Reachability Analysis for Higher-Order Pushdown Systems. *Logical Methods in Computer Science* 4(4), 2008.
26. W. Blum, C.-H. L. Ong: The Safe Lambda Calculus. *Logical Methods in Computer Science* 5(1), 2009.
27. M. Hague, C.-H. L. Ong. A saturation method for the modal  $\mu$ -calculus over pushdown systems. *Information and Computation* 209(5): 799-821, 2011.
28. N. Kobayashi and C.-H. L. Ong. Complexity of model checking recursion schemes for fragments of the modal mu-calculus. *Logical Methods in Computer Science* 7(4), 2011.

### Refereed Conference Papers

29. C.-H. L. Ong. Fully abstract models of the lazy lambda calculus. In *Proceedings of 29th IEEE Annual Symposium on Foundations of Computer Science (FOCS 1988)*, New York, pages 368 – 376. IEEE Computer Society Press, 1988.

30. C.-H. L. Ong. Lazy lambda calculus: Theories, models and local structure characterization. In *Proceedings 19th International Colloquium on Automata, Programming and Languages (ICALP 1992)*, Vienna, pages 487 – 498. Springer-Verlag, 1992. LNCS 623.
31. C.-H. L. Ong. Non-determinism in a functional setting – extended abstract. In *Proceedings 8th IEEE Annual Symposium on Logic in Computer Science (LICS 1993)*, Montreal, pages 275 – 286. IEEE Computer Society Press, 1993.
32. J. M. E. Hyland and C.-H. L. Ong. Modified realizability topos and strong normalization proofs. In *Proceedings Conference on Typed Lambda Calculus and Applications (TLCA 1993)*, Utrecht, pages 179 – 194. Springer-Verlag, 1993. LNCS 664.
33. C.-H. L. Ong and E. Ritter. A generic strong normalization proof: application to the Calculus of Constructions (extended abstract). In *Computer Science Logic: 7th Workshop, Swansea, Selected Papers (CSL 1993)*, pages 261 – 279, 1994. LNCS 832.
34. J. M. E. Hyland and C.-H. L. Ong. Pi-calculus, dialogue games and PCF. In *Proceedings 7th ACM Conference on Functional Programming Languages and Computer Architecture (FPCA 1995)*, San Diego, pages 96 – 107. ACM Press, 1995.
35. C.-H. L. Ong. A semantic view of classical proofs: type-theoretic, categorical, denotational characterizations. In *Proceedings 11th IEEE Symposium on Logic in Computer Science (LICS 1996)*, New Jersey, pages 230 – 241. IEEE Computer Society Press, 1996.
36. C.-H. L. Ong and C. A. Stewart. A Curry-Howard foundation for functional computation with control. In *Proceedings of ACM Symposium on Principle of Programming Languages (POPL 1997)*, Paris, pages 215 – 227. ACM Press, 1997.
37. A. D. Ker, H. Nickau, and C.-H. L. Ong. A universal innocent game model for the Böhm tree lambda theory. In *Computer Science Logic: Proceedings of the 8th Annual Conference on the EACSL Madrid (CSL 1999)*, pages 405 – 419. Springer-Verlag, 1999. LNCS 1683.
38. T. W. Koh and C.-H. L. Ong. Explicit substitution internal languages for autonomous and \*-autonomous categories. *Electronic Notes in Theoretical Computer Science*, 29, 1999. Proceedings of the 8th Conf. on Category Theory and Computer Science (CTCS 1999), Edinburgh, 30 pp.
39. A. S. Murawski and C.-H. L. Ong. Exhausting Strategies, Joker Games and Full Completeness for IMLL with Unit. *Electronic Notes in Theoretical Computer Science*, 29, 1999. Proceedings of the 8th Conference on Category Theory and Computer Science (CTCS 1999), Edinburgh, 31 pp.
40. A. S. Murawski and C.-H. L. Ong. Discreet games, Light Affine Logic and PTIME computation. In *Proceedings of CSL2000, Annual Conference of the European Association of Computer Science Logic (CSL 2000)*, Fischbachau, pages 427 – 441. Springer-Verlag, 2000. LNCS 1862.
41. A. S. Murawski and C.-H. L. Ong. Dominator trees and fast verification of proof nets. In *Proceedings of 15th IEEE Symposium on Logic in Computer Science (LICS 2000)*, Santa Barbara, pages 181 – 191. IEEE Computer Society Press, 2000.
42. A. S. Murawski and C.-H. L. Ong. Evolving games and essential nets for affine polymorphism. In *Proceedings 5th International Conference on Typed Lambda Calculi and Applications (TLCA 2001)*, Krakow, pages 360 – 375. Springer-Verlag, 2001. LNCS 2044.
43. A. Basu, C.-H. L. Ong, A. Rasala, F. B. Shepherd, and G. Wilfong. Route oscillation in I-BGP. In *Proceedings of ACM SIGCOMM Conference on Applications, Technologies, Architectures, and Protocols for Computer Communication (SIGCOMM 2002)*, pages 235 – 247. ACM Press, 2002.
44. C.-H. L. Ong. Model checking Algol-like languages using Game Semantics (invited paper). In *Proceedings of 22nd Conference on Foundations of Software Technology and Theoretical Computer Science (FSTTCS 2002)*, Kanpur, pages 33 – 37. Springer-Verlag, 2002. LNCS 2556.
45. C.-H. L. Ong. Observational equivalence of third-order Idealized Algol is decidable. In *Proceedings of IEEE Symposium on Logic in Computer Science (LICS 2002)*, 22-25 July 2002, pages 245 – 256. Computer Society Press, 2002.



46. C.-H. L. Ong and P. Di Gianantonio. Games characterizing Levy-Longo trees. In *Proceedings of 29th International Colloquium on Automata, Languages and Programming, Malaga (ICALP 2002)*, pages 476 – 487, 2002. LNCS 2380.
47. S. Abramsky, D. R. Ghica, A. S. Murawski, and C.-H. L. Ong. Algorithmic Game Semantics and Component-Based Verification. In *Proceedings of SAVBCS: Specification and Verification of Component-Based Systems*, pages 66 – 74, 2003.
48. S. Abramsky, D. R. Ghica, A. S. Murawski, and C.-H. L. Ong. Applying game semantics to compositional software modelling and verification. In *Proceedings 10th International Conference on Tools and Algorithms for the Construction and Analysis of Systems (TACAS 2004)*, pages 421 – 435, 2004. LNCS 2988.
49. S. Abramsky, D. R. Ghica, A. S. Murawski, C.-H. L. Ong, and I. D. B. Stark. Nominal games and full abstraction for the nu-calculus. In *Proceedings 19th Annual IEEE Symposium on Logic in Computer Science (LICS 2004)*, pages 150 – 159. IEEE Computer Society Press, 2004.
50. D. R. Ghica, A. S. Murawski, and C.-H. L. Ong. Syntactic control of concurrency. In *Proceedings of the 31st International Colloquium on Automata, Languages and Programming (ICALP 2004)*, pages 683 – 694, 2004. LNCS 3142.
51. A. S. Murawski, C.-H. L. Ong, and I. Walukiewicz. Idealized Algol with ground recursion and DPDA equivalence. In *Proceedings 32nd International Colloquium Automata, Languages and Programming (ICALP 2005)*, LNCS 3580, pages 917 – 929. Springer-Verlag, 2005.
52. K. Aehlig, J. G. de Miranda, and C.-H. L. Ong. Safety is not a restriction at level 2 for string languages. In *Proceedings of the 8th International Conference on Foundations of Software Science and Computational Structures (FoSSaCS 2005)*, Edinburgh, pages 490 – 501, 2005. LNCS 3411.
53. K. Aehlig, J. G. de Miranda, and C.-H. L. Ong. The monadic second order theory of trees given by arbitrary level two recursion schemes is decidable. In *Proceedings of the 7th International Conference on Typed Lambda Calculi and Applications (TLCA 2005)*, Kyoto, pages 39 – 54, 2005. LNCS 3461.
54. C.-H. L. Ong. On model-checking trees generated by higher-order recursion schemes. In *Proceedings 21st Annual IEEE Symposium on Logic in Computer Science (LICS 2006)*, Seattle, pages 81 – 90. Computer Society Press, 2006.
55. C.-H. L. Ong. Some results on a game-semantic approach to the verification of finitely-presentable infinite structures. In *Proceedings of EATCS Annual Conference on Computer Science Logic (CSL 2006)*, Szeged, 2006. LNCS 4207.
56. S. B. Sanjabi, C.-H. L. Ong. Fully abstract semantics of additive aspects by translation. In *Proceedings of Aspected Oriented Software Development (AOSD 2007)*, pages 135-148, ACM Press, 2007
57. M. Hague and C.-H. L. Ong. Symbolic Backwards-Reachability Analysis for Higher-Order Pushdown Systems. In *Proceedings of Foundations of Software Science and Computational Structures (FoSSaCS 2007)*, pages 213-227, LNCS, 2007.
58. C.-H. L. Ong. Hierarchies of Infinite Structures Generated by Pushdown Automata and Recursion Schemes. In *Proceedings of Mathematical Foundations of Computer Science (MFCS 2007)*, pages 15-21, LNCS, 2007.
59. W. Blum, C.-H. L. Ong: The Safe Lambda Calculus. In *Proceedings of Typed Lambda Calculus and Applications (TLCA 2007)*, Paris, pages 39-53, LNCS, 2007.
60. C.-H. L. Ong. Verification of Higher-Order Computation: A Game-Semantic Approach. In *Proceedings of European Symposium on Programming (ESOP 2008)*, pages 299-306, LNCS, 2008.
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62. M. Hague, A. S. Murawski, C.-H. L. Ong, O. Serre. Collapsible Pushdown Automata and Recursion Schemes. *Proceedings of IEEE Symposium on Logic in Computer Science (LICS 2008)*, pages 452-461, Computer Society Press, 2008.
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66. N. Kobayashi and C.-H. L. Ong. Complexity of Model Checking Recursion Schemes for Fragments of the Modal Mu-Calculus. In *Proceedings of 36th International Colloquium on Automata, Languages and Programming (ICALP (2) 2009)*, pages 223-234, LNCS 5556, Springer-Verlag, 2009.
67. David Hopkins, C.-H. Luke Ong. Homer: A Higher-Order Observational Equivalence Model checker. CAV 2009: 654-660, 2009.
68. Matthew Hague, C.-H. Luke Ong. Winning Regions of Pushdown Parity Games: A Saturation Method. In CONCUR 2009: 384-398, 2009.
69. Christopher H. Broadbent, Arnaud Carayol, C.-H. Luke Ong, Olivier Serre: Recursion Schemes and Logical Reflection. LICS 2010: 120-129
70. Matthew Hague, C.-H. Luke Ong: Analysing Mu-Calculus Properties of Pushdown Systems. SPIN 2010: 187-192
71. Gérard Basler, Matthew Hague, Daniel Kröning, C.-H. Luke Ong, Thomas Wahl, Haoxian Zhao: Boom: Taking Boolean Program Model Checking One Step Further. TACAS 2010: 145-149
72. C.-H. Luke Ong, Steven James Ramsay: Verifying higher-order functional programs with pattern-matching algebraic data types. POPL 2011: 587-598
73. Jonathan Kochems, C.-H. Luke Ong: Improved Functional Flow and Reachability Analyses Using Indexed Linear Tree Grammars. RTA 2011: 187-202
74. David Hopkins, Andrzej S. Murawski, C.-H. Luke Ong: A Fragment of ML Decidable by Visibly Pushdown Automata. ICALP (2) 2011: 149-161
75. Robin P. Neatherway, Steven James Ramsay, C.-H. Luke Ong: A traversal-based algorithm for higher-order model checking. ICFP 2012: 353-364
76. C.-H. Luke Ong, Takeshi Tsukada: Two-Level Game Semantics, Intersection Types, and Recursion Schemes. ICALP (2) 2012: 325-336
77. David Hopkins, Andrzej S. Murawski, C.-H. Luke Ong: Hector: An Equivalence Checker for a Higher-Order Fragment of ML. CAV 2012: 774-780
78. Emanuele D’Osualdo, Jonathan Kochems, C.-H. Luke Ong: Automatic Verification of Erlang-Style Concurrency. SAS 2013: 454-476
79. Luke Ong: Recursion Schemes, Collapsible Pushdown Automata and Higher-Order Model Checking. LATA 2013: 13-41
80. Martin Lester, Luke Ong and Max Schaefer. *Information Flow Analysis for a Dynamically Typed Functional Language with Staged Metaprogramming*. In *Proceedings of IEEE 26th Computer Security Foundations Symposium (CSF 2013)*, pp. 209-223, 2013.
81. Jonathan Kochems, C.-H. Luke Ong: Safety Verification of Asynchronous Pushdown Systems with Shaped Stacks. CONCUR 2013: 288-302
82. Steven James Ramsay, Robin P. Neatherway, C.-H. Luke Ong: A type-directed abstraction refinement approach to higher-order model checking. POPL 2014: 61-72
83. Egor Ianovski and C.-H. Luke Ong: Guarantee-Nash for Boolean Games is NExpTime-hard. In *Proceedings of 14th International Conference on Principles of Knowledge Representation and Reasoning (KR 2014)*, 20-24 July 2014, Vienna, Austria.
84. Takeshi Tsukada and C.-H. Luke Ong: Compositional Higher-Order Model Checking via  $\omega$ -regular Games over Böhm Trees. In *Proceedings of Twenty-Ninth Annual ACM/IEEE Symposium on Logic in Computer Science (LICS 2014)*, 14–18 July 2014, Vienna, Austria.

85. Robin P. Neatherway and C.-H. Luke Ong: TravMC2: higher-order model checking for alternating parity tree automata. In *Proceedings of 2014 International Symposium on Model Checking of Software (SPIN 2014)*, pp. 129–132, San Jose, CA, USA, July 21–23, 2014.
  86. C.-H. Luke Ong: Higher-order Model Checking: From Theory to Practice. In *Proceedings of 21st Annual Static Analysis Symposium*, p. vii, Springer LNCS, Munich, Germany, 11–13 September 2014.
  87. Conrad Cotton-Barratt, David Hopkins, Andrzej S. Murawski, C.-H. Luke Ong: Fragments of ML Decidable by Nested Data Class Memory Automata. *FoSSaCS 2015*: 249–263.
  88. Conrad Cotton-Barratt, Andrzej S. Murawski, C.-H. Luke Ong: Weak and Nested Class Memory Automata. *LATA 2015*: 188–199.
  89. C.-H. Luke Ong: Higher-Order Model Checking: An Overview. *LICS 2015*. 15 pages.
  90. Takeshi Tsukada and C.-H. Luke Ong: Nondeterminism in Game Semantics via Sheaves. *LICS 2015*. 12 pages.
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## 7 Professional Activities

### 7.1 International External Review

- Chairman, Expert Panel on Mathematics and Informatics, Academic Research Council, Ministry of Education, Republic of Singapore (2006–2014).
- Member, Academic Research Council, Ministry of Education, Republic of Singapore (since 2013). The ARC advise the Singapore Government on academic research policies and strategies in universities, and the allocation of research funding in line with international standards.
- Member, International Quadquennial Review Panel, 8 INRIA Project Teams on the *Proof and Verification* Theme, 17–18 March 2015, Rungis, Paris, France.
- External Panel Member, Quinquennial Review of the Graduate School of Informatics, University of Edinburgh, 2013–2014.
- Member, Agence d'Évaluation de la Recherche et de l'Enseignement Supérieur (AERES) International Panel to review the CNRS Laboratory Laboratoire Preuves, Programmes et Systèmes (PPS) UMR 7126, December 2012.
- Member of Jury, Gödel Centenary Young Scholars' Competition, Kurt Gödel Society, Vienna, April 2006.
- Member of Jury (2008–2012, 2014), **Ackermann Award**. European Association of Computer Science Logic (EACSL) Outstanding Doctoral Dissertation Award for Logic in Computer Science.
- Member (since 2014), Inaugural Selection Committee for the **European Association of Theoretical Computer Science (EATCS) Distinguished Doctoral Dissertation Award**.

### 7.2 Editorial Duties

- Member of Editorial Board, *Acta Informatica* (since 2015).
- Member of Editorial Board, *Logical Methods in Computer Science* (since 2004).
- Editor, *Reviews for the Association for Symbolic Logic*, (2005 – 2007).
- Editorial Advisor, London Mathematical Society *Journal of Computation and Mathematics* (1997 – 2003).
- Member of Advisory Board, Book Series in Programs and Proofs, Polimetrica Publisher (2006 – 2010).
- Member of the EPSRC Peer Review College (Information Technology and Computer Science), 1997 – 2000, 2003 – 2006.

### 7.3 Professional Societies and Conference Steering Committees

- **General Chair** (2012 – 2015), Advisory Board Member (2010 – 2012), Organising Committee Member (2007 – 2009), [ACM/IEEE Symposium on Logic in Computer Science \(LICS\)](#).
- **Vice Chair** (since 2014), [ACM Special Interest Group on Logic and Computation \(SIGLOG\)](#).
- Council Member (since 2012), [European Association of Theoretical Computer Science \(EATCS\)](#).
- Executive Committee Member (since 2007), [European Association of Computer Science Logic \(EACSL\)](#).
- Steering Committee Member (since 2009 except 2013), [European Association of Theory and Practice of Software \(ETAPS\)](#).
- Steering Committee Member (since 2011), [Typed Lambda Calculus and Applications \(TLCA\)](#).
- Steering Committee Member (since 2009 – 2018), [Foundations of Software Science and Computation Structures \(FoSSaCS\)](#).
- Member (2008 – 2013); Member Emeritus (since 2014), [IFIP Working Group 2.2](#).
- Steering Committee Member (since 2012), [Workshop on Logic, Languages, Information and Computation \(WoLLIC\)](#).
- Steering Committee Member (since 2005), [Annual Workshop on Games for Logic and Programming Languages \(GaLoP\)](#).
- Steering Committee Member (since 2013), [International Workshop on Higher-Order Program Analysis \(HOPA\)](#).
- Steering Committee Member (2009 – 2015), [International Workshop on Logic and Computational Complexity \(LCC\)](#).
- Steering Committee Member (2008 – 2013), [ESF Research Networking Programme: Games for Design and Verification \(GAMES\)](#).

### 7.4 Conference Organisation

- **Programme Committee (PC) Chair**, [22nd Annual IEEE Symposium on Logic in Computer Science \(LICS 2007\)](#), Wrocław, Poland, 10–14 July 2007.
- **PC Chair and Conference Chair**, 14th Annual Conference of the European Association for Computer Science Logic (CSL 2005), Oxford, August 2005.
- **PC Chair**, [ETAPS Conference on Foundations of Software Science and Computational Structures \(FoSSaCS 2010\)](#), Paphos, Cyprus, 20–28 March 2010.
- **PC Chair**, [10th International Conference on Typed Lambda Calculus and Applications \(TLCA 2011\)](#), Novi Sad, Serbia, 1–3 June 2011.
- **PC Chair** (Track B), [5th IFIP International Conference on Theoretical Computer Science \(TCS 2008\)](#), Milano, Italy, 7–10 September 2008.
- **Programme Chair and Organising Committee Chair**, *Research Programme on Logic, Automata and Games in Verification*, Institute for Mathematical Sciences, National University of Singapore, 22 August – 30 September 2016.
- **Programme Co-chair**, [Workshop on Abstraction and Verification in Semantics](#), Institut Henri Poincaré Thematic Trimester on Semantics of Proofs and Certified Mathematics, 23–27 June 2014.
- **Programme Co-chair**, Special Session on Logic and Algorithms of Higher-Order Computation, [Association of Symbolic Logic North America Annual Meeting, University of Colorado, Boulder, USA, 19–22 May 2014](#).
- **PC Chair**, [Workshop on Logic, Languages and Computation \(WoLLiC 2012\)](#), Buenos Aires, September 2012.
- **PC Co-chair**, 5th IEEE International Conference on Theoretical Aspects of Software Engineering (TASE 2011), 29–31 August 2011, Xi’an, China.

- **PC Co-chair**, Workshop on Higher-Order Program Analysis (HOPA 2014) – FLoC 2014 Workshop, Vienna University of Technology, Austria, 18th July.
- **PC Co-chair** and **Conference Co-chair**, A Conference in Celebration of the 60th Birthday of Samson Abramsky, Oxford, May 2013.
- **PC Co-chair**, **Workshop on Higher-Order Recursion Schemes and Pushdown Automata**, 10–12 March 2010, Université Paris Diderot, Paris, France.
- **PC Co-chair**, **Shonan Meeting on Automated Techniques for Higher-Order Program Verification**, Shonan Village Centre 23–26 September 2011.
- **PC Chair**, **Workshop on Games and Verification**, and Annual Workshop of EU TMR-Network on Games and Automata for Synthesis and Validation, Isaac Newton Institute for Mathematical Sciences, 2–7 July 2006.
- **PC Chair**, Special Session on Games, Mathematical Foundations of Programming Semantics, Carnegie-Mellon University, Pittsburgh, 2004.
- **PC Chair** and **Conference Chair**, EU TMR Linear Logic in Computer Science Annual Meeting, 15–18 Apr 2000, University of Oxford, UK.
- **Convener** (1993 – 1994), Cambridge-London-Oxford Seminars on Game Semantics.

## 7.5 Selected Programme Committees

- 3rd International Workshop on Strategic Reasoning, Oxford, 21-22 September 2015.
- 12th International Symposium on Functional and Logic Programming (FLOPS 2014), 4–6 June 2014. Kanazawa, Japan.
- LICS: Annual IEEE Symposium on Logic in Computer Science: 2011, 2007, 2003, 1998, 1995.
- CSL: EACSL Annual Conference on Computer Science Logic: 2009, 2008, 2005.
- Member of Scientific Advisory Committee, Research Programme on Logic and Algorithms (LAA 2008), International Centre for Mathematical Sciences, Edinburgh, 21–25 July 2008.
- TLCA: Typed Lambda Calculus and Applications: 2007, 2011, 2012, 2014.
- LPAR: International Conference on Logic for Programming Artificial Intelligence and Reasoning: 2007, 2004, 2002.
- 35th International Colloquium on Automata, Languages and Programming (ICALP), 6–13 July 2008, Reykjavik, Iceland.
- Computability in Europe 2009 (CiE 2009), Mathematical Theory and Computational Practice, Heidelberg, Germany, 19–24 July 2009.
- GandALF: International Symposium on Games, Automata, Logics and Formal Verification: 2011, 2015
- Annual Conference on Theory and Applications of Models of Computation (TAMC): 2009, 2012.
- MFPS: Conference on the Mathematical Foundations of Programming Semantics: 2005, 2012, 2013.
- Conference on Highlights of Logic, Games and Automata, Paris, 2–5 September 2013.
- 20th International Conference on Foundations of Software Technology and Theoretical Computer Science (FSTTCS 2000), New Delhi, December 2000.
- Workshop on Higher-Order Program Analysis (HOPA): 2013, 2014.
- Workshop on Fixpoints in Computer Science (FICS) – CSL 2013 Workshop, Torino, Italy, 1 September 2013.
- International Workshop on Trends in Tree Automata and Tree Transducers (TTATT 2013).
- 5th Asian Computing Science Conference, Penang, Malaysia, 25–27 November 2000.
- International Symposium Theoretical Aspects of Computer Software (TACS), Sendai, Japan, 23–26 September 1997.
- 6th International Workshop on Harnessing Theories for Tool Support in Software (TTSS 2013), Jiangxi Normal University, Nanchang, China, 28–30 October 2013.
- 1st Workshop on Algorithmics on Infinite State Systems (AISS 2012) – LICS 2012 Workshop, Dubrovnik, Croatia, 29 June 2012.
- 6th Workshop on Intersection Types and Related Systems (ITRS 2012) – LICS 2012 Workshop, Dubrovnik, Croatia, 29 June 2012.
- Games for Logic and Programming Languages (GaLoP) – ETAPS 2010 Workshop, 20–21 March 2010, Paphos, Cyprus.
- 4th Workshop on Reachability Problems (RP), Brno, Czech Republic, 28–29 August 2010.
- 5th International Symposium On Domain Theory, Shanghai, China.
- 1st International Workshop on Linearity – CSL 2009 Workshop, 12 September 2009.

- Workshop on Classical Logic and Computation – ICALP 2006 Workshop, Venice, 15 July 2006.
- Workshop on Structures and Deduction – ICALP 2005 Workshop, Lisbon, 16-17 July 2005.
- Asian Symposium on Programming Languages and Systems (APLAS):2004, 2012.
- 5th International Workshop on Implicit Computational Complexity – LICS 2003 Workshop, Ottawa, 26–27 June 2003.
- Asian Logic Colloquium, Singapore, June 1993.

## 7.6 Other Referee and Review Work

- Reviewers of full professorships at the National University of Singapore (2013); Tel Aviv University (2011); Swansea University.
- Member, Search Committee for Editor-in-Chief, ACM Transactions on Computational Logic, 2015.

# 8 Teaching and Examining

## 8.1 Examination of Doctoral and Habilitation Theses

I have acted as **external examiner** of the following theses:

1. Axel Haddad: *Shape-Preserving Transformations of Higher-Order Recursion Schemes*. Université Paris Diderot PhD Thesis, 2013. Supervisors: Dr. Olivier Serre and Dr. Arnaud Carayol.
2. Michele Pagani: *Some Advances in Linear Logics*, Habilitation Thesis, Université Paris 13, December 2013.
3. Jim Huan-Pu Kuo: *Parity Games: Descriptive Complexity and Algorithms for New Solvers*, PhD Thesis, Imperial College of Science, Technology and Medicine, London, 2013. Supervisor: Prof. Michael Huth.
4. Hugh Steele: *Combinatorial Arguments for Linear Logic Full Completeness*, PhD Thesis, University of Manchester, 2012. Supervisor: Dr. Andrea Schalk.
5. Dulma Rodriguez: *Amortised Resource Analysis for Object-Oriented Programs*, PhD Thesis, Ludwig Maximilian Universität München, 2012. Supervisor: Prof. Martin Hofmann and Dr. Richard Mayr.
6. Christina David: *Enhanced Specification Expressivity for Verification with Separation Logic*, PhD Thesis, National University of Singapore, 2012. Supervisor: Prof. Wei-Ngan Chin.
7. Guanhua He: *Program Analysis in A Combined Shape and Numerical Domain*, PhD Thesis, University of Durham, 2011. Supervisor: Prof. Shengchao Qin.
8. Barbara Petit: *Lambda Calculus with Constructors*, PhD Thesis, ENS Lyon, July 2011. Supervisor: Dr. Alexander Miquel.
9. Anthony Widjaja To: *Model Checking Infinite-State Systems: Generic and Specific Approaches*, PhD Thesis, University of Edinburgh, 2010. Supervisor: Prof. Leonid Libkin.
10. Nicolas Blanc: *Static Analysis for SystemC with Scoot: From Verification to Simulation*, PhD Thesis, ETH Zurich, 2009. Supervisor: Prof. Daniel Kröning.
11. Nicolas Tabereau: *Modalités de Ressource et Contrôle en Logique Tensorielle*, PhD Thesis, Université Paris Diderot, October 2008. Supervisor: Dr. Paul-André Mélliès.
12. Alexis Saurin: *Une Étude Logique de Control*, PhD Thesis, Ecole Polytechnique, Paris, September 2008. Supervisor: Prof. Dale Miller.
13. Patrick Baillot: *Linear Logic, Types and Implicit Computational Complexity*, Habilitation thesis, University Paris 13, March 2008.

14. Giulio Manzonetto: *Models and Theories of Lambda Calculus*, PhD Thesis, Ca' Foscari University of Venice and Université Paris Diderot, February 2008. Supervisor: Prof. Antonino Salibra.
15. Stéphane Langrand: *Normalisation and Equivalence in Proof Theory and Type Theory*, PhD Thesis, Université Paris Diderot and University of St. Andrews, 2006. Supervisor: Prof. Roy Dyckhoff and Prof. Delia Kesner.
16. Matthew Wall: *Games for Syntactic Control of Interference*, DPhil Thesis, University of Sussex, March 2005. Supervisor: Prof. Guy McCusker.
17. Gianluca Franco: *Game Semantics for the Untyped Lambda Calculus*, PhD Thesis, University of Udine, Italy, April 2001. Supervisor: Prof. Furio Honsell.
18. Krystof Worytkiewicz: *Synchronous Communication in Categories of Processes*, Docteur ès Sciences Thesis, Federal Institute of Technology, Lausanne, January 2000. Supervisor: Prof. C. Petitpierre.
19. James Laird: *A Semantic Analysis of Control*, PhD Thesis, University of Edinburgh, April 1999. Supervisor: Prof. Samson Abramsky.
20. Mariangiola Dezani-Ciancaglini: *Concurrent and Nondeterministic Lambda Calculus*, PhD Thesis, Catholic University of Nijmegen, The Netherlands, October 1996. Supervisor: Prof. Henk Barendregt.
21. Andrew Moran: *Call-by-name, Call-by-need and McCarthy's Amb*, Licentiate thesis, Göteborg University, Sweden, May 1994. Supervisor: Prof. John Hughes.

#### Examination of University of Oxford DPhil Theses

1. Vincent Nimal, *Static Analyses over Weak Memory*. DPhil Thesis, University of Oxford, 2015. Co-examiner: Dr. Paul McKenney. Supervisor: Prof. Daniel Kröning.
2. Daniel Bundala, *Algorithmic Verification Problems in Automata-Theoretic Settings*, DPhil Thesis, University of Oxford, 2014. Co-examiner: Prof. Dr. Stefan Göller. Supervisor: Prof. Joel Ouaknine.
3. Leopold Haller, *Abstract Satisfaction*, DPhil Thesis, University of Oxford, 2014. Co-examiner: Prof. Patrick Cousot. Supervisor: Prof. Daniel Kröning.
4. Alexander Kaiser, *Monotonicity in Shared-Memory Program Verification*, DPhil Thesis, University of Oxford, 2013. Co-examiner: Dr. Manuel Oriol. Supervisor: Prof. Daniel Kröning.
5. Rastislav Lenhardt, *Two Variable and Linear Temporal Logic in Model Checking and Games*, DPhil Thesis, University of Oxford, 2013. Co-examiner: Prof. Christel Baier. Supervisor: Prof. James Worrell.
6. Pavel Avgustinov, *Trace Monitoring with Free Variables*, DPhil Thesis, University of Oxford 2010. Co-examiner: Prof. Klaus Osterman. Supervisor: Prof. Oege de Moor.
7. Penelope Economou, *Extensions and Applications of Dynamic Epistemic Logic*, DPhil Thesis, University of Oxford 2010. Co-examiner: Prof. Hans van Ditmarsch. Supervisor: Dr Alexandru Baltag.
8. Damian Sereni, *Termination Analysis of Higher-Order Functional Programs*, DPhil Thesis, University of Oxford 2010. Co-examiner: Prof. Chris Hankin. Supervisor: Prof. Oege de Moor.
9. Nikos Tzvelekos, *Nominal Game Semantics*, DPhil Thesis, University of Oxford 2009. Co-examiner: Dr. Ian Stark. Supervisor: Prof. Samson Abramsky.
10. Yorck Hünke, *Dependent Types for a Lazy Functional Programming Languages*, DPhil Thesis, University of Oxford 2004. Co-examiner: Dr. Ralf Hinze. Supervisor: Prof. Oege de Moor.
11. James Worrell, *On Coalgebras and Final Semantics*, DPhil Thesis, University of Oxford, 2001. Supervisor: Dr. Grant Malcolm.
12. José Barros, *Semantics of Non-terminating Systems through Term Rewriting*, DPhil Thesis, University of Oxford, 1995. Supervisor: Professor Joseph A. Goguen.
13. Ranko S. Lazić, *A Semantic Study of Data Independence with Applications to Model Checking*, DPhil Thesis, University of Oxford, 2000. Supervisor: Professor A. W. Roscoe.

14. Jason J. Brown, *Presentation of Unification in a Logical Framework*, DPhil Thesis, University of Oxford, 1996. Supervisor: Dr. Lincoln A. Warren.
15. Catherine A. Eastaughffe, *The Geometry of Interaction as a Theory of Cut Elimination with Structure-Sharing*, DPhil Thesis, University of Oxford, May 1995. Supervisor: Dr. Lincoln A. Warren
16. Kwong-Cheong Wong,  *$\lambda\Pi$ -Provability based on the  $\lambda\mu\epsilon^\forall$ -calculus*, MSc Thesis, University of Oxford, May 2000. Supervisor: Dr. Lincoln A. Wallen.

## 8.2 University Lectures

I have given the following lecture courses:

1. Automata, Logic and Games (MSc), 2004 – 2014, University of Oxford,
2. Design and Analysis of Algorithms (1st year), 2007 – 2009, University of Oxford
3. Functional Programming (1st year), University of Oxford, 2004
4. Lambda Calculus and Types (3rd year), 1994 – 1997, 2001 – 2002, University of Oxford,
5. Computational Complexity (3rd year), 1997 – 1999, University of Oxford,
6. Models of Computation (1st year), 2003, University of Oxford,
7. Types, Proofs and Categorical Logic (MSc), 1997, University of Oxford,
8. Compilers (2nd year), 2001 – 2003, University of Oxford,
9. Elements of Computer Programming (16 hours), 1994, University of Oxford,
10. Object-Oriented Programming (2nd year), 1998 – 1999, University of Oxford,

## 8.3 University Examining

I was **external examiner** of the Computer Science Tripos, University of Cambridge, 2009 – 2012.

I have acted as examiners of the following degree courses at the University of Oxford:

- MSc (Mathematics and Foundations of Computer Science): 1996 – 1997, 1997 – 1998 (Chairman), 1999 – 2000 (Chairman).
- Final Honours School in Computer Science, and in Mathematics and Computer Science: 2004 – 2005.
- Moderations in Computer Science, and in Mathematics and Computer Science: 2001 – 2002, 2002 – 2003 (Chairman).

## 8.4 Oxford College Tutoring

I tutor Computer Science at Merton College (since 1994) and St. John's College (1994 – 2004). In 2002 – 2003, I direct the studies of pupils reading Computer Science, Mathematics and Computer Science, and Engineering and Computer Science from these colleges. I also act as in-college tutor of graduate students in these disciplines at Merton.

**Subjects tutored:** Functional Programming, Design and Analysis of Algorithms, Procedural Programming, Digital Hardware, Models of Computation, Formal Logic, Concurrency, Distributed Systems, Formal Program Design, Computational Complexity, Principles of Programming Languages, Compilers, Data Structures and Algorithms, Lambda Calculus, Object-Oriented Programming, B1 (Logic, Set Theory and Computability), Operating Systems and Networks, first-year Analysis, second-year Topology, Gödel's Incompleteness Theorems.



## 9 University Administration

### 9.1 University of Oxford Administration

I am **Director of Graduate Studies** of the Department of Computer Science (since May 2011). I was **Course Director** of the MSc in Mathematics and Foundations of Computer Science (2004-2005), and **Chair** of the MSc (Mathematics and Foundations of Computer Science) Supervisory Committee (2009-2010). I was Secretary of the Computation Subfaculty (1998 – 2000), and Lecture List Secretary (1998 – 2000). I am the department **Harassment Advisor** (since 2009).

I have served on the following University / Faculty / Departmental Committees:

- University Academic Computing Services Committee (1996 – 1997)
- OUCL Graduate Studies
- Computation and Mathematics Standing Committee
- Mathematics Standing Committee
- MSc (Mathematics and Foundations of Computer Science) Supervisory Committee
- MSc (Computer Science) Supervisory Committee
- Mathematics and Philosophy Standing Committee,
- Computing Laboratory Library
- Undergraduate Teaching Panel
- Computing Laboratory Student Conference

### 9.2 Merton College Administration

I was **Dean of Graduates** of Merton College (2003 – 2008) and Chair of the Academic Review Committee (2011 – 2012). I chaired the Administration Working Group, Strategic Review of the College 2012 – 2013.

In addition to the Governing Body and Warden and Tutors Committee, I have served on the following Committees:

- Computing Services
- Academic Needs
- Hardship
- Domestic
- Joint Committee
- Finance (1996 – 2000)
- Library
- Scholarships

and various appointments and Junior Research Fellowship election committees.