

Curriculum Vitae of Vincenzo Ciancia

February 16, 2015

Personal Data

Name: Ciancia Vincenzo
Birth: 01/11/1977 - Matera (Italy)
Address: Room I57 - ISTI-CNR - Via Moruzzi 1 - 56124 Pisa ITALY
E-mail: vincenzoml@gmail.com

Education

Idoneità CNR (2011): After participation in CNR call for a permanent researcher position.

Ph.D. (years 2005-2008): (Supported by Italian MIUR grant) Thesis: “Accessible functors and final coalgebras for named sets”, supervisor: Prof. Ugo Montanari.

Diploma (year 2007): Information Engineering diploma - “Diploma di Ingegnere dell’informazione”.

Master degree (year 2004): Computer Science, University of Pisa, grade 110 cum laude. Thesis: “A Temporal Logic for HD-Automata”, supervisor: Prof. Ugo Montanari.

Bachelor degree (year 2004): Computer Science, University of Pisa, grade 110 cum laude.

Foreign Languages

“Advanced English” (CEFR level “C2”), grade 93/100, year 2005/2006 at “Centro Linguistico Interdipartimentale”, University of Pisa. Excellent knowledge of written and spoken English.

Positions

April 2013 - present: “Ricercatore a tempo determinato”. Fixed term researcher at ISTI-CNR, supported by the EU FP7 600708 QUANTICOL project, supervisor dr. Mieke Massink.

April 2012 - April 2013: “Assegno di ricerca”. Post-doc researcher at the IIT-CNR, supported by EU FP7 Aniketos 257930 and EU FP7 NESSOS 256980, supervisor dr. Fabio Martinelli.

January 2010 - March 2012: Post-doc research contract: ILLC-University of Amsterdam. Supported by the NWO VICI grant 639.073.501, supervisor Prof. Yde Venema.

March - December 2009: Post-doc research contract: Universidad Complutense of Madrid. Supported by PROMESAS-CAM (S-0505/TIC/0407), supervisor Prof. Narciso Martí Oliet.

August 2008 - February 2009: Research grant: University of Pisa. Supported by the IST-FP6/FET-GC2 Integrated Project SENSORIA.

2008 (January-July): Research grant: University of Pisa. Supported by the IST-FP6/FET-GC2 Integrated Project SENSORIA.

2008: Consultant for the administration of “Provincia di Lucca”. Implementation of an open-source component, using the open document format and XML/XSLT to replace a proprietary server-side technology.

2005-2007: Ph.D. grant: supported by the Italian Ministry of University and Research.

2004-2005: IT Employee (programmer): 'Mare' s.r.l. (Via Novecchio, 10 - 56121 - Ospedaletto - Pisa), an ICT company that serves major national and international naval companies.

Teaching

Courses

2014: Assistant: “Linguaggi di Programmazione” (semantics of programming languages) - Department of Mathematics - University of Pisa. Co-teaching with Prof. Fabio Gadducci.

2013: Assistant: “Linguaggi di Programmazione” (program languages) - Department of Mathematics - University of Pisa. Co-teaching with Prof. Pierpaolo Degano.

2011: Lecturer: “Mathematical Structures in Logic” (lattice theory, category theory, universal algebra) - Master of Logic - Institute for Logic, Language and Computation - University of Amsterdam.

2010: Lecturer: January Project (6 ECTS credits) “From Category Theory to Implementation: A Behavioural Symmetry-Reduction Algorithm” - Master of Logic - Institute for Logic, Language and Computation - University of Amsterdam.

2010: Lecturer: “Mathematical Structures in Logic” (lattice theory, category theory, universal algebra) - Master of Logic - Institute for Logic, Language and Computation - University of Amsterdam.

2008: Lecturer: “Informatica 2” - Comunicazione Pubblica, Sociale e di Impresa - University of Pisa.

2007: Teaching assistant: “Sistemi informatici di supporto alle decisioni” - Sistemi e Progetti di Comunicazione - University of Pisa.

2006: Teaching assistant: “Laboratorio 3” (introduction to programming in C) - Dept. of Computer Science - University of Pisa.

Supervision

September 2014: Student project (3 credits). Gianluca Grilletti. Implementation of a spatio-temporal model-checker.

September 2012: Master Thesis. Alwin Block. “Interaction, observation and denotation: a study of dialgebras for program semantics”. ILLC. University of Amsterdam.

January 2012: Student project (6 credits). Fabio Zanasi. Monads in computation and category theory. ILLC. University of Amsterdam.

January 2011: Group student project (6 credits, 4 students). From category theory to implementation. Partition refinement for coalgebras in a topos. ILLC. University of Amsterdam.

Research Interests

Research interests: formal methods for computer science, spatial and temporal logics, model checking, service-oriented computing, process calculi, nominal sets and nominal calculi, category theory, automata theory for finite and infinite words, modal fixed-point logics, algebras, coalgebras, dialgebras, semantics of concurrency and of programming languages in general.

Ph.D. thesis: supervised by prof. Ugo Montanari, reviewed by Dr. M. Fiore (Cambridge, UK) and Dr. A. Kurz (Leicester, UK). “Accessible functors and final coalgebras for named sets”.

Invited Talks

- 13/10/2013:** Dagstuhl, DE. Dagstuhl Seminar 13422 on Nominal Computation Theory. Title: “A decidable class of (nominal) omega-regular languages over an infinite alphabets” <http://www.dagstuhl.de/en/program/calendar/semhp/?semnr=13422>.
- 07/12/2012:** Dagstuhl, DE. Dagstuhl seminar 12411 on Coalgebraic Logics. Title: “Interaction and observation: dialgebras in program semantics” <http://www.dagstuhl.de/de/programm/kalender/semhp/?semnr=12411>
- 9/02/2012:** University of Warsaw, invited by Prof. Bartek Klin. Meeting “Nominal sets meet automata theory”.
- 16/06/2011:** Department of Computer Science, University of Pisa, invited by Prof. Ugo Montanari. Title: “From Mealy machines to dialgebras: interaction and observation, categorically”.
- 15/06/2011:** Lecture. IMT - Institute for advanced studies, Lucca, invited by Prof. Ugo Montanari. Topic: nominal calculi and categorical models of concurrency.
- 17/05/2011:** Department of Mathematics - University of Savoie - Chambéry. Invited by Dr. Tom Hirschowitz. Title: “Labelled transition systems with interfaces and symmetry: coalgebras in a presheaf category and their finite representations”.
- 11/03/2011:** Department of Computer Science - University of Oxford (UK), invited by Dr. Mehrnoosh Sadrzadeh and Dr. Nikos Tzevelekos. Title: “Local names, memory and symmetry in operational semantics”.
- 01/06/2010:** Meeting “A three-day seminar on nominal sets, nominal algebra and nominal techniques with Vincenzo Ciancia and Jamie Gabbay”. University of Leicester (UK). Title: “Automata and languages with names and binders”.
<http://www.cs.le.ac.uk/events/clog/special>
- 09/12/2009:** *Dagstuhl seminar 09502 on Coalgebraic Logics*. Title: “Families: an efficient categorical model of computation with resources”. Schloss Dagstuhl, Germany.
<http://www.dagstuhl.de/de/programm/kalender/semhp/?semnr=09502>
- 02/02/2009:** Institute of Logic, Language and Computation - University of Amsterdam, invited by dr. Yde Venema. Title “Nominal calculi and beyond: finite representation and symmetry reduction in presheaf categories”.
- 14/11/2008:** Ecole Normale Supérieure of Paris, invited by dr. Bruno Blanchet. Title: “Categorical models of nominal computation, and their implementation”.
- 22/10/2008:** Heriot-Watt University (Edinburgh, UK), invited by dr. Murdoch J. Gabbay. Title: “Specifying and implementing automated verification for name generation and name passing formalisms”.
- 16/06/2008:** Talk, title: “A Stone-type duality for nominal sets”. 19th Workshop on Algebraic Development Techniques 2008. Abstracts of the workshop available as technical report TR-08-15, University of Pisa, Italy.

Publications

Journal papers

1. V. Ciancia, J. A. Martín, F. Martinelli, I. Matteucci, M. Petrocchi, E. Pimentel: Automated Synthesis and Ranking of Secure BPMN Orchestrators. *International Journal of Secure Software Engineering*, Volume 5, Issue 2, pages 44-64. IGI Global, 2014.

2. V. Ciancia, U. Montanari. Symmetries, local names, dynamic (de)-allocation of names. *Information and computation*. Volume 208, Pages 1349 - 1367. Elsevier, 2010.
3. V. Ciancia, G. L. Ferrari, R. Guanciale, D. Strollo. Event based choreography. *Science of computer programming*. Volume 75, Issue 10, Pages 809-918. Elsevier, 2010.
4. F. Bonchi, M. Buscemi, V. Ciancia, F. Gadducci. A presheaf environment for the explicit fusion calculus. *Journal of Automated Reasoning*, Volume 49 Issue 2. Pages. 161-183. Springer, 2012.
5. V. Ciancia, G. L. Ferrari, R. Guanciale, D. Strollo, E. Tuosto: Model-Driven Development of Long Running Transactions. Results of the SENSORIA Project 2011. *Lecture Notes in Computer Science 6582*, pages 326-348. Springer, 2011

Conferences and workshops

1. Vincenzo Ciancia, Matteo Sammartino. A class of automata for the verification of infinite, resource-allocating behaviours. 9th International Symposium on Trustworthy Global Computing, TGC 2014. *Lecture Notes in Computer Science*, Springer, 2015. to appear.
2. V. Ciancia, D. Latella, M. Loreti, M. Massink. Specifying and Verifying Properties of Space. *Theoretical Computer Science - 8th IFIP TC 1/WG 2.2 International Conference, (IFIP TCS)*, Rome, Italy, September 1-3, 2014. Proceedings. *Lecture Notes in Computer Science 8705*, Pages 222-235. Springer, 2014.
3. M. H. ter Beek, L. Bortolussi, V. Ciancia, S. Gnesi, J. Hillston, D. Latella, M. Massink. A Quantitative Approach to the Design and Analysis of Collective Adaptive Systems for Smart Cities. *ERCIM News 2014(98)*.
4. Vincenzo Ciancia, Matteo Sammartino: Nominal deterministic omega-automata. 1st International Workshop on Meta Models for Process Languages (MeMo) 2014. Affiliated to DisCoTec, June 6th, 2014, Berlin, Germany 2014.
5. V. Ciancia, S. Gilmore, D. Latella, M. Loreti and M. Massink. Data verification for collective adaptive systems: spatial model-checking of vehicle location data. 2nd FoCAS Workshop on Fundamentals of Collective Systems, 2014 IEEE Eight International Conference on Self-Adaptive and Self-Organizing Systems Workshops, DOI 10.1109/SASOW.2014.16. To Appear.
6. V. Ciancia, F. Martinelli, I. Matteucci, C. Morisset: Quantitative Evaluation of Enforcement Strategies - Position Paper. *Foundations and Practice of Security - 6th International Symposium, FPS 2013*, La Rochelle, France, October 21-22, 2013, Revised Selected Papers. *Lecture Notes in Computer Science 8352*, pp. 455-464. Springer 2014
7. V. Ciancia, F. Martinelli, I. Matteucci, M. Petrocchi, J. A. Martin, E. Pimentel. Automated Synthesis and Ranking of Secure BPMN Orchestrators. 2013 International Conference on Availability, Reliability and Security, ARES 2013, Regensburg, Germany, September 2-6, 2013, pp. 455-464 IEEE Computer Society 2013.
8. V. Ciancia. Interaction and Observation: Categorical Semantics of Reactive Systems Trough Dialgebras. *Algebra and Coalgebra in Computer Science - 5th International Conference, CALCO 2013*, Warsaw, Poland, September 3-6, 2013. *Lecture Notes in Computer Science 8089*, pp. 110-125. Springer 2013.
9. Vincenzo Ciancia, Fabio Martinelli, Ilaria Matteucci, Marinella Petrocchi, José Antonio Martín, Ernesto Pimentel. A tool for the synthesis of cryptographic orchestrators. *Model-Driven Security Workshop, MDsec 2012*, In conjunction with MoDELS 2012, Innsbruck, Austria, October 1, 2012. ACM 2012.
10. V. Ciancia, Y. Venema. Stream automata are coalgebras. 11th Workshop on Coalgebraic Methods in Computer Science (CMCS). *Lecture Notes in Computer Science*, 2012, Volume 7399/2012, pp. 90-108. Springer.

11. V. Ciancia. Interaction and observation, categorically. ICE 2011 – 4th Interaction and Concurrency Experience. June 9, 2011, Reykjavik, Iceland (satellite of DisCoTec’11). Electronic Proceedings in Theoretical Computer Science 59, pp. 25-36, Open Publishing Association 2011.
12. Murdoch J. Gabbay, V. Ciancia. Freshness and name-restriction in sets of traces with names. 4th International Conference, FOSSACS 2011, part of ETAPS 2011, Saarbrücken, Germany, March 26-April 3, 2011. Lecture Notes in Computer Science 6604, pages 365-380, Springer 2011.
13. V. Ciancia, G. L. Ferrari, R. Guanciale, D. Strollo, E. Tuosto. Model-Driven Development of Long Running Transactions. Results of the SENSORIA Project 2011. Lecture Notes in Computer Science 6582, pages 326-348, Springer 2011.
14. V. Ciancia, A. Kurz, U. Montanari. Families of symmetries as efficient models of resource binding. 10th Workshop on Coalgebraic Methods in Computer Science. Electronic Notes in Theoretical Computer Science, 264 - 2, pages 63-81. Elsevier, 2010,
15. V. Ciancia, G. L. Ferrari, R. Guanciale, D. Strollo. Global Coordination Policies for Services. 5th workshop on Formal Aspects of Computing Software - Electronic Notes in Theoretical Computer Science, 260, pages 73-89. Elsevier, 2010.
16. F. Bonchi, M. Buscemi, V. Ciancia, F. Gadducci. A Category of Explicit Fusions. In P. Degano, R. De Nicola., J. Meseguer, editors. “Concurrency, Graphs, Models”. Lecture Notes in Computer Science, 5065, pages 544-562. Springer, 2008.
17. V. Ciancia, G. Ferrari, M. Pistore, E. Tuosto. History dependent automata for service compatibility. In P. Degano, R. De Nicola, J. Meseguer, editors, “Concurrency, Graphs, Models”. Lecture Notes in Computer Science, 5065, pages 625-641. Springer, 2008.
18. V. Ciancia, G. L. Ferrari, R. Guanciale, D. Strollo. Checking Correctness of Transactional Behaviors. 28th IFIP WG6.1 International Conference on Formal Techniques for Networked and Distributed Systems (FORTE2008). Lecture Notes in Computer Science, 5048, pages 134-148. Springer, 2008.
19. V. Ciancia, U. Montanari. A name abstraction functor for named sets. 9th Workshop on Coalgebraic Methods in Computer Science, Electronic Notes in Theoretical Computer Science, 203 - 5, pages 49-70. Elsevier, 2008.
20. V. Ciancia, G. L. Ferrari. Co-algebraic models for quantitative spatial logics. 5th Workshop on Quantitative Aspects of Programming Languages, Electronic Notes in Theoretical Computer Science, 190 - 3, pages 43-58. Elsevier, 2007.

Ph.D. Thesis

- V. Ciancia. Accessible functors and final coalgebras for named sets. University of Pisa, 2008.

Other publications

1. Massimo Bartoletti, Vincenzo Ciancia, Gian Luigi Ferrari, Roberto Guanciale, Daniele Strollo, Roberto Zunino. Architetture informatiche: l’orientamento ai servizi. Mondo Digitale, Issue 25, 2008. AICA, ITALIA.

Technical reports and papers under review

1. V. Ciancia, Y. Venema. Omega-automata: a coalgebraic perspective on regular omega-languages.
2. V. Ciancia, G. Grilletti, D. Latella, M. Loreti, M. Massink. A spatio-temporal model-checker. QUANTICOL TR-QC-10-2014. December 15, 2014.

3. V. Ciancia, D. Latella, M. Massink. Logics of Space and Time. QUANTICOL TR-QC-01-2014. Jan. 08, 2014.
4. V. Ciancia, D. Latella, M. Loreti, M. Massink. Specifying and Verifying Properties of Space - Extended Version. CoRR abs/1406.6393 (2014)
5. V. Ciancia, M. Sammartino. A decidable class of (nominal) omega-regular languages over an infinite alphabet. CoRR abs/1310.3945 (2013)
6. V. Ciancia, E. Tuosto, Nikos Tzevelekos. The languages of history-dependent automata.
7. V. Ciancia, E. Tuosto. A novel class of automata for languages on infinite alphabets. Technical report CS-09-003. Dept. of Computer Science, University of Leicester (UK), December 2009.
8. V. Ciancia, A. Kurz, U. Montanari. Minimal support and families for the semantics of calculi with structured resources. Technical Report TR-09-24, Dip. Informatica. Università di Pisa. Dicembre 2009.

Talks in conferences

1. 8th IFIP TC 1/WG 2.2 International Conference, (IFIP TCS), Rome, Italy, September 1-3, 2014.
2. 1st International Workshop on Meta Models for Process Languages (MeMo) 2014. Affiliated to DisCoTec, June 6th, 2014, Berlin, Germany 2014
3. Algebra and Coalgebra in Computer Science - 5th International Conference, CALCO 2013, Warsaw, Poland, September 3-6, 2013
4. Workshop on Coalgebraic Methods in Computer Science (ETAPS) - March 31 - Aprile 01, 2012, Tallin, Estonia.
5. Workshop on Model Driven Security (MDSEC) in MoDELS 2012, 1 Ottobre 2012, Innsbruck, Austria.
6. ICE 2011 – 4th Interaction and Concurrency Experience. June 9, 2011, Reykjavik, Iceland (satellilte of DisCoTec'11).
7. Foundations of Software Science and Computation Structures (FOSSACS) 2011 - March 28-30, 2011, Saarbrucken, Germany.
8. Workshop on Coalgebraic Methods in Computer Science (ETAPS)- March 26-28, 2010, Paphos, Cyprus.
9. Dagstuhl seminar 09502 on Coalgebraic Logics - December 06-12, 2009, Dagstuhl, Germany.
10. Workshop on Formal Aspects of Computing Software 2008 - September 10-12, 2008, Malaga, Spain.
11. Workshop on Coalgebraic Methods in Computer Science 2008 (ETAPS) - April 4-6, 2008, Budapest, Hungary.
12. Workshop on Quantitative Aspects of Programming Languages 2007 (ETAPS) - March 24-25, 2007, Braga, Portugal.

Research visits

May 2011: (1 week) Visiting the University of Savoye - Chambéry (FR) (Dr. Tom Hirschowitz).
Topic: toposes, coalgebras and automata.

March 2011: (2 weeks) Visiting the University of Oxford (UK) (dr. Nikos Tzevelekos and dr. Mehrnoosh Sadrzadeh). Topic: automata over infinite alphabets.

June 2010: (2 weeks) Visiting the University of Leicester (UK) (dr. Alexander Kurz and dr. Emilio Tuosto, joint visit with Murdoch J. Gabbay). Topic: regular expressions with names and binding.

August 2009: (1 week) Visiting the University of Leicester (UK) (dr. Alexander Kurz and dr. Emilio Tuosto). Topic: regular languages and automata with names and binders.

November 2008: (5 weeks) Visiting the University of Leicester (UK) (dr. Alexander Kurz and dr. Emilio Tuosto). Topic: history-dependent automata and their relationship with nominal sets.

August 2008: (2 weeks) Visiting the CWI of Amsterdam (dr. Marcello Bonsangue). Topic: Stone duality for process calculi.

Program committee

1. 2nd International Workshop on Meta Models for Process Languages (MeMo) 2015
2. 1st International Workshop on Meta Models for Process Languages (MeMo) 2014
3. 4th workshop Interaction and Concurrency Experiences (ICE). 2011

Conference Organisation

- 91st Peripatetic Seminar on Sheaves and Logic. November 27-28, 2010, Amsterdam (NL).
<http://staff.science.uva.nl/~ciancia/PSSL91>
- Coalgebra Day - March 3, 2010 - ILLC Amsterdam (NL).
http://staff.science.uva.nl/~ciancia/coalgebra_day
- 19th Intl. Workshop on Algebraic Development Techniques (WADT) - June 13-16, 2008 - Pisa.

Ph.D. Schools

- Bertinoro International Spring School (BISS05) - March 7-18, 2005
http://www.cs.unibo.it/bacheca/eventi/20050307_biss2005.html
- Lipari School. Formal Methods: Theory And Practice - organized by R. Alur, Z. Manna, E.M. Clarke, M. Vardi, T.A. Henzinger, D. Jackson - July 10-23, 2005
<http://lipari.cs.unict.it/LipariSchool/CS/previousedition/edition2005.htm>

Participation in Research Projects

- EU FP7 QUANTICOL “A Quantitative Approach to Management and Design of Collective and Adaptive Behaviours” (EU grant n. 600708)
- EU FP7 Network Of Excellence - NESSOS “Network of Excellence on Engineering Secure Future Internet Software Services and Systems” (EU grant n. 256980)
- EU FP7 Aniketos “Ensuring trustworthiness and security in service composition” (EU grant 257930)
- EU FP7 ASCENS (Autonomic Service-Component Ensembles)
<http://www.ascens-ist.eu/>
- NWO VICI 639.073.501 (Algebras and Coalgebras: the Mathematical Environment of Modal Logic)
<http://staff.science.uva.nl/~yde/ac/alg-coalg.html>.
- PROMESAS-CAM S-0505/TIC/0407 (Programa en métodos para el desarrollo de software fiable, de alta calidad y seguro)
<http://www.promesas-cm.org>
- EU FP6-IST IP 16004 SENSORIA (Software Engineering for Service-Oriented Overlay Computers)
<http://www.sensoria-ist.eu>
- PRIN 2005015824 ART (Analysis of Reduction systems through Transition systems)
<http://farfarello.dimi.uniud.it/twiki/bin/view/Art/WebHome>
- MIUR FIRB TOCAL.IT (Knowledge Oriented Technologies for the Aggregation of Companies in Internet)
<http://www.dis.uniroma1.it/tocai/index.php>

Programming skills

Deep knowledge of OCaml, C, C++, Haskell, Bash scripting, PHP, SQL, C#, and document production in latex and html, XML+XSL. Productive in Python, Java, Prolog. Knowledge of assembly languages and of Eiffel. Extensive knowledge of the unix environment and programming platform, and of linux system administration.

Active participation in the free software community doing both paid jobs and unpaid cooperation in various open source projects. See for example:

- <http://php-o3-template.sourceforge.net> (commissioned by *Provincia di Lucca*) - a server-side solution to generate custom Open Document Format and PDF documents from PHP using XML and XSLT. In collaboration with Provincia di Lucca, Ing. Paolo Bertamini.
- <http://pdf2oo.sourceforge.net> - converter from Adobe PDF to the Open Document Format.
- <http://relfs.sourceforge.net> - Linux file system that stores metadata in a relational database, featuring virtual directories that actually perform live queries - implemented in OCaml using libfuse.
- <http://ocamlfuse.sourceforge.net> - binding for libfuse in OCaml, allowing one to implement Linux file systems in this language.
- <http://camlusb.sourceforge.net> - binding between OCaml and libusb.
- <http://gnudap.sourceforge.net> - linux driver for a family of non-standard mp3 players, written in OCaml.