

## Publications by Giuseppe Castagna.

### Books

- [1] G. Castagna. *Object-Oriented Programming: A Unified Foundation*. Progress in Theoretical Computer Science Series. Birkuser, Boston, 1997. ISBN 3-7643-3905-5 (hardcover, 388 pages).

### Book chapters

- [2] V. Benzaken, G. Castagna, H. Hosoya, B.C. Pierce, and S. Vansummeren. *The Encyclopedia of Database Systems*, chapter “XML Typechecking”. Springer, 2009. ISBN 978-0-387-35544-3.
- [3] M. Bugliesi, G. Castagna, S. Crafa, R. Focardi, and V. Sassone. Name-passing calculi and crypto-primitives: a survey. In *Foundations of Security Analysis and Design*, number 2946 in Lecture Notes in Computer Science, pages 91–138. Springer, 2004.

### Edition of proceedings or special issues

- [4] G. Castagna and J.T. Boyland, editors. *Selected Papers of the “18th European Symposium on Programming”*, volume 411, Issue 51-52 of *Theoretical Computer Science*. Elsevier, 2010.
- [5] G. Castagna, editor. *Programming Languages and Systems: Proceedings of the 18th European Symposium on Programming, ESOP 2009*, volume 5502 of *Lecture Notes in Computer Science*. Springer, 2009.
- [6] G. Castagna and I. Walukiewicz, editors. *Selected Papers of the Conference “International Colloquium on Automata, Languages and Programming 2008”*. Special issue of *Logical Methods in Computer Science*. IfCoLog, 2009.
- [7] R. Amadio, A. Asperti, and G. Castagna, editors. *From Type Theory to Morphological Complexity*. Special issue of *Information and Computation*, volume 207(5). Academic Press, 2008.
- [8] G. Castagna and A. Compagnoni, editors. *Foundation of Object-Oriented Languages*. Special issue of *Information and Computation*, volume 177(1). Academic Press, 2002.

### Refereed international journals

- [9] G. Castagna, N. Gesbert, and L. Padovani. A theory of contracts for web services. *ACM Transactions on Programming Languages and Systems*, 31(5):1–61, 2009. Supersedes the article in POPL ’08.
- [10] H. Hosoya, A. Frisch, and G. Castagna. Parametric polymorphism for XML. *ACM Transactions on Programming Languages and Systems*, 32(1):1–56, 2009.
- [11] G. Castagna, R. De Nicola, and D. Varacca. Semantic subtyping for the  $\pi$ -calculus. *Theoretical Computer Science*, 398(1-3):217–242, 2008. Essays in honour of Mario Coppo, Mariangiola Dezani-Ciancaglini and Simona Ronchi della Rocca.
- [12] A. Frisch, G. Castagna, and V. Benzaken. Semantic subtyping: dealing set-theoretically with function, union, intersection, and negation types. *Journal of the ACM*, 55(4):1–64, 2008. Extends and supersedes LICS ’02 and ICALP/PPDP ’05 articles.
- [13] A. Phillips, L. Cardelli, and G. Castagna. A graphical representation for biological processes in the stochastic pi-calculus. *Transactions on Computational Systems Biology*, 7:123–152, 2006.

- [14] G. Castagna, J. Vitek, and F. Zappa Nardelli. The Seal Calculus. *Information and Computation*, 201(1):1–54, 2005.
- [15] M. Bugliesi, G. Castagna, and S. Crafa. Access control for mobile agents: The Calculus of Boxed Ambients. *ACM Transactions on Programming Languages and Systems*, 26(1):57–124, 2004. Includes and extends [53, 54].
- [16] M. Bugliesi and G. Castagna. Behavioral typing for Safe Ambients. *Computer Languages*, 28(1):61–99, November 2002.
- [17] G. Castagna and G. Chen. Dependent types with subtyping and late-bound overloading. *Information and Computation*, 168(1):1–67, 2001.
- [18] G. Castagna. Unifying overloading and  $\lambda$ -abstractions:  $\lambda^{\{\}}$ . *Theoretical Computer Science*, 176(1-2):337–345, April 1997.
- [19] K. Bruce, L. Cardelli, G. Castagna, The Hopkins Object Group, G. Leavens, and B. Pierce. On binary methods. *Theory and Practice of Object Systems*, 1(3):221–242, 1996.
- [20] G. Castagna. Integration of parametric and “ad hoc” second order polymorphism in a calculus with subtyping. *Formal Aspects of Computing*, 8(3):247–293, 1996.
- [21] G. Castagna. Covariance and contravariance: conflict without a cause. *ACM Transactions on Programming Languages and Systems*, 17(3):431–447, 1995.
- [22] G. Castagna. A meta-language for typed object-oriented languages. *Theoretical Computer Science*, 151(2):297–352, November 1995.
- [23] G. Castagna, G. Ghelli, and G. Longo. A calculus for overloaded functions with subtyping. *Information and Computation*, 117(1):115–135, February 1995.

#### **International collections with peer reviewing selection**

- [24] G. Castagna and J. Vitek. Seal: A framework for secure mobile computations. In H. Bal, B. Belkhouche, and L. Cardelli, editors, *Internet Programming Languages*, number 1686 in Lecture Notes in Computer Science, pages 47–77. Springer, 1999. Collected works.

#### **Invited Articles**

- [25] G. Castagna, M. Dezani Ciancaglini, and L. Padovani. On global types and multi-party sessions. In *FMOODS & FORTE 2011, joint 13th IFIP International Conference on Formal Methods for Open Object-based Distributed Systems and 31th IFIP International Conference on FORmal TEchniques for Networked and Distributed Systems.*, number 6722 in Lecture Notes in Computer Science. Springer, 2011. Invited talk.
- [26] G. Castagna. CDuce, an XML processing programming language: From theory to practice. In *Proc. of SBLP 2007, XI Brazilian Symposium on Programming Languages*, pages 3–4. SBC - Brazilian Computer Society, 2007.
- [27] G. Castagna. Patterns and types for querying XML. In *Proceedings of DBPL 2005, 10th International Symposium on Database Programming Languages* Lecture Notes in Computer Science, n.3774, pages 1–26 Springer (full version) and *XSym 2005, 3rd International XML Database Symposium* Lecture Notes in Computer Science n.3671, pages 1-3, Springer (summary), 2005. Joint DBPL-XSym invited talk.
- [28] G. Castagna. Semantic subtyping: challenges, perspectives, and open problems. In *ICTCS 2005, Italian Conference on Theoretical Computer Science*, number 3701 in Lecture Notes in Computer Science, pages 1–20. Springer, 2005.

- [29] G. Castagna and A. Frisch. A gentle introduction to semantic subtyping. In Proceedings of *PPDP '05, the 7th ACM SIGPLAN International Symposium on Principles and Practice of Declarative Programming*, pages 198-208, ACM Press (full version) and *ICALP '05, 32nd International Colloquium on Automata, Languages and Programming*, Lecture Notes in Computer Science n. 3580, pages 30-34, Springer (summary), Lisboa, Portugal, July 2005. Joint ICALP-PPDP keynote talk.
- [30] G. Castagna. An overview of Boxed Ambients. In *TOSCA '01, Theory of Concurrency, Higher Order, and Types Workshop*, number 62 in Electronic Notes in Theoretical Computer Science, pages 1–5. Elsevier Science B.V., 2001. Invited lecture based on joint work with M. Bugliesi and S. Crafa: [53, 54].
- [31] G. Castagna, R. Rousseau, and J.-C. Royer. Fiabilit des langages objets : le type est-il suffisant ? *l'Objet*, 4(1), 1998.

#### Refereed National Journals

- [32] G. Castagna. Le modle fond sur la surcharge : une visite guide. *Technique et Science Informatiques*, 15(6):673–708, June 1996.

#### Articles in other journals

- [33] G. Castagna and G. Leavens. Foundation of object-oriented languages: 2nd workshop report. *SIGPLAN Notices*, 30(2):5–11, February 1995.

#### International Conferences with peer reviewing selection

- [34] G. Castagna and Z. Xu. Set-theoretic foundation of parametric polymorphism and subtyping. In *ICFP '11: 16th ACM-SIGPLAN International Conference on Functional Programming*, September 2011. Type-checker prototype available at <http://www.pps.jussieu.fr/~zhiwu/files/subtype-checker-0.3.tar.gz>.
- [35] G. Castagna, M. Dezani-Ciancaglini, E. Giachino, and L. Padovani. Foundations of session types. In *PPDP '09: 11th international ACM SIGPLAN Symposium on Principles and Practice of Declarative Programming*, pages 219–230. ACM, 2009.
- [36] G. Castagna and L. Padovani. Contracts for mobile processes. In *CONCUR 2009, 20th. International Conference on Concurrency Theory*, number 5710 in Lecture Notes in Computer Science, pages 211–228. Springer, 2009.
- [37] V. Benzaken, G. Castagna, D. Colazzo, and C. Miachon. Pattern by Example: type-driven visual programming of XML queries. In *PPDP '08: 10th international ACM SIGPLAN Symposium on Principles and Practice of Declarative Programming*, pages 131–142. ACM, 2008.
- [38] G. Castagna, N. Gesbert, and L. Padovani. A theory of contracts for web services. In *POPL '08, 35th ACM Symposium on Principles of Programming Languages*, pages 261–272, January 2008.
- [39] G. Castagna and K. Nguyen. Typed iterators for XML. In *ICFP '08: 13th ACM-SIGPLAN International Conference on Functional Programming*, pages 15–26, April 2008.
- [40] V. Benzaken, G. Castagna, D. Colazzo, and K. Nguyen. Type-based XML projection. In *VLDB 2006, 32nd International Conference on Very Large Data Bases*, pages 271–282, 2006.
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- [42] G. Castagna, M. Dezani-Ciancaglini, and D. Varacca. Encoding CDuce into the CPi-calculus. In *CONCUR 2006, 17th. International Conference on Concurrency Theory*, number 4137 in Lecture Notes in Computer Science, pages 310–326. Springer, 2006.
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- [44] G. Castagna, D. Colazzo, and A. Frisch. Error mining for regular expression patterns. In *ICTCS 2005, Italian Conference on Theoretical Computer Science*, number 3701 in Lecture Notes in Computer Science, pages 160–172. Springer, 2005.
- [45] G. Castagna, R. De Nicola, and D. Varacca. Semantic subtyping for the  $\pi$ -calculus. In *LICS '05, 20th Annual IEEE Symposium on Logic in Computer Science*. IEEE Computer Society Press, 2005.
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- [64] G. Castagna, G. Ghelli, and G. Longo. A semantics for  $\lambda$ &-early: a calculus with overloading and early binding. In M. Bezem and J.F. Groote, editors, *TLCA '93, International Conference on Typed Lambda Calculi and Applications*, number 664 in Lecture Notes in Computer Science, pages 107–123, Utrecht, The Netherlands, March 1993. Springer.
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#### **National Conferences with peer reviewing selection**

- [66] V. Benzaken, G. Castagna, D. Colazzo, and C. Miachon. Pattern by Example: type-driven visual programming of XML queries. In *Bases de Données Avances*, 2007. Preliminary version of [37].
- [67] V. Benzaken G. Castagna, D. Colazzo, and K. Nguyen. Type-based XML projection. In *Bases de données advances*, 2006. Preliminary version of [40].
- [68] V. Benzaken, G. Castagna, and C. Miachon. A full pattern-based paradigm for XML query processing. In *Bases de Données Avances*, 2004. Preliminary version of [43].
- [69] J. Vitek and G. Castagna. Mobile computations and hostile hosts. In *Journes Francophones des Langues Applicatifs*, pages 113–132. Editions Herms, 1999.
- [70] M.-V. Aponte and G. Castagna. Programmation modulaire avec surcharge et liaison tardive. In *Journes Francophones des Langues Applicatifs*, Val Morin, Qubec, Canada, 1996.
- [71] G. Castagna. A proposal for making  $O_2$  more type safe. In *Bases de données advances*. Publi par INRIA Lorraine, 1995.

**International workshops  
on invitation or selection based on peer reviewing**

- [72] G. Castagna. Tackling parametric polymorphism for XML, 2010. Invited talk at the *Symposium on Computer Science and Novel Technologies*.
- [73] G. Castagna and L. Padovani. A preliminary proposal of decidable testing relations for infinitary asynchronous ccs (position paper). In *INFINITY 2009: 11th International Workshop on Verification of Infinite-State Systems*, 2009. Electronic proceedings.
- [74] G. Castagna and K. Nguyen. Typed iterators for XML. In *PLAN-X '08, 6th ACM-SIGPLAN Workshop on Programming Language Technologies for XML*, January 2008. Superseded by the ICFP '08 version.
- [75] G. Castagna, N. Gesbert, and L. Padovani. A theory of contracts for web services. In *PLAN-X '07, 5th ACM-SIGPLAN Workshop on Programming Language Technologies for XML*, January 2007. PC selection. Superseded by the version appeared in POPL '08.
- [76] G. Castagna. Milner's encoding revisited: new trends in (sub-)typing the pi-calculus, 2006. *Emerging Trends in Concurrency Theory: A Colloquium in Honor of Robin Milner*.
- [77] G. Castagna and A. Frisch. A gentle introduction to semantic subtyping. In *Second workshop on Programmable Structured Documents*, Hakone, Japan, 2004. Invited paper. Published in [29].
- [78] G. Castagna, R. De Nicola, and D. Varacca. Semantic subtyping for the  $\pi$ -calculus. In *Foundation of Global and Ubiquitous Computing*, 2004. PC selection.
- [79] V. Benzaken, G. Castagna, and A. Frisch. CDuce: a white paper. In *PLAN-X '02, Programming Language Technologies for XML*, Pittsburgh, October 2002. PC selection. Preliminary version of [48].
- [80] M. Bugliesi, G. Castagna, and S. Crafa. Boxed Ambients: types and security. In *International Workshop on Concurrency and Coordination*, Lipari, 2001. PC selection.
- [81] M. Bugliesi and G. Castagna. Mobile objects. In *7th Workshop on Foundation of Object-Oriented Languages*, Boston, 2000. PC selection.
- [82] M. Bugliesi and G. Castagna. Secure safe ambients and JVM security. In *IFIP Workshop on Issues in the Theory of Security*, Genève, 2000. PC selection.
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- [87] G. Castagna. The use of overloading in class-based object-oriented languages. In *ANSA workshop on F-bounded quantification*, Cambridge, 1992. PC selection.
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### **User guides, reference manuals, descriptive notes of applications or programming languages**

- [89] V. Benzaken, G. Castagna, and A. Frisch. *CDuce Tutorial*, 2002-2010. Available on line at <http://www.cduce.org/tutorial.html>.
- [90] G. Castagna, J. Demouth, A. Frisch, and S. Zacchiroli. *CDuce User Manual*, 2002-2010. Available on line at <http://www.cduce.org/manual.html>.
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- [92] J. Boyland and G. Castagna. Parasitic methods for Java 1.02. Compiler patches available at <http://www.di.ens.fr/~castagna>.

### **Submitted articles**

- [93] V. Benzaken, G. Castagna, D. Colazzo, and K. Nguyen. Optimizing XML querying using type-based document projection. *Soumis une revue internationale*, fvrier 2010.

### **Course notes**

- [94] G. Castagna. Soutypage et programmation objets. Technical report, DEA smantique, preuves et programmation, ENS, CNAM, Universits Paris VI et Paris VII, 1996. 122 pages.
- [95] V. Benzaken and G. Castagna. Langages de programmation pour bases de donnees. Technical report, DEA thorie et ingenierie des bases de donnees, Universits Paris I et Paris XI, 1995.
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### **Dissertations**

- [99] G. Castagna. Types et Modles : des langages objets squentiels la mobilit et la securit. Habilitation diriger des recherches, Universit Paris 7, January 2002.
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### **Unpublished reports**

- [101] G. Castagna and J. Vitek. Commitment and confinement for the Seal calculus. Rapport de Recherche, Laboratoire d'Informatique, Ecole Normale Suprieure - Paris, 1999.
- [102] G. Castagna. Strong typing in object-oriented paradigms. Rapport de Recherche 92-11, Laboratoire d'Informatique, Ecole Normale Suprieure - Paris, June 1992.