Francesca Rossi

January 2016

Employment history:

- Oct.2015-currently: Research scientist, IBM T.J. Watson Research Center, Yorktown Heights, NY, USA (on leave from University of Padova).
- 2014-2015: Radcliffe fellow, Harvard University (sabbatical year).
- 2001-currently: Tenured Full Professor of Computer Science, University of Padova, Italy.
- 1998-2001: Associate Professor of Computer Science, University of Padova, Italy.
- 1992-1998: Assistant Professor of Computer Science, Dept. of Computer Science, University of Pisa, Italy.
- 1987-1988: Visiting scholar, MCC, Austin, TX.

Education:

- PhD in Computer Science, University of Pisa, Italy, 1993. Thesis title: "Constraints and Concurrency". Thesis advisor: Prof. Ugo Montanari.
- Laurea in Scienze dell'Informazione, June 1986, University of Pisa, Italy. Thesis awarded with honors (110 e lode).

Visiting appointments:

- Sabbatical year at Harvard University, Radcliffe Institute for Advanced Study (Cambridge, MA);
- Visiting scholar at MCC (Austin, TX), Xerox PARC (Paolo Alto, CA), Weizmann Institute (Rehovot, Israel), Bell Communication Labs (NJ), UC Irvine (CA, USA), NICTA-Univ. of New South Wales (Sydney, Australia), University College Cork (Ireland), MIT (Cambridge, MA).

Research interests: Her research interests range from Artificial Intelligence to Social Choice, with particular attention to constraint programming, combinatorial optimization, and preference aggregation. In the past, she has also worked on language semantics, graph grammars, logic programming, and Petri nets. Her Ph.D. thesis was concerned with formal models of settings where constraints and concurrency coexist.

In recent years she has been mainly interested in reasoning with preferences in the context of multi-agent systems. She has studied formal frameworks to compactly model preferences, by comparing their expressive power. Also, she has studied some desirable normative properties of multi-agent preference aggregation in the presence of incomplete preference orderings. The study of some of these properties, such as strategy-proofness, involves computational complexity aspects; these can mitigate the classical

impossibility results for non-manipulation and non-dictatorship. Moreover, she has examined various forms of uncertainty in agent preferences (such as missing preferences, preference intervals, probability distributions). The goal is to make good decisions even in the presence of such uncertainty, requiring that as little as possible of the missing information be elicited. Finally, she has considered matching problems which model two-sided markets, where agents express preferences for each other. She has exploited results from computational social choice to prove innovative results in this area.

She has also continued working in the single agent setting, where, in the context of preference reasoning, she has shown that very little preference elicitation is needed to be able to obtain a good solution in various preference models based on soft constraints with missing preferences.

Appointments and awards:

– Associate editor in chief of JAIR (Journal of AI Research), 2015-2016, then Editor in chief 2017-2018.
– Member of the editorial board of the journals Constraints (Kluwer/Springer), Knowledge and Information Systems (KAIS), Annals of Mathematics and Artificial Intelligence (AMAI), and the Artificial Intelligence Journal. Corner editor for the journal of Logic and Computation (Oxford Journals).
– She has organized several international events. Besides many workshops, in 1998 she was the conference chair of the international conference on Constraint Programming (CP 1998), and in 2003 she was program chair of the same conference (CP 2003). She was conference organizer for the 1st International conference on Algorithmic Decision Theory (ADT 2009). She was program chair of IJCAI 2013 (Beijing, China).
– She regularly participates in program committees of many international conferences related to Artificial Intelligence, Constraint Programming, and related research areas. For example, in 2012 she was on the senior program committee of the International Conference on Autonomous Agents and Multi-agent Systems (AAMAS), International Conference on Knowledge Representation and Reasoning (KR), European Conference on Artificial Intelligence (ECAI), International Workshop on Constraint techniques for Planning and Scheduling (COPLAS), International Conference on Logic in AI (JELIA), AIMSA, 18th International Conference on Logic for Programming Artificial Intelligence and Reasoning (LPAR-18), International Symposium on Artificial Intelligence and Mathematics (ISAIM). In 2011, she was an area chair of the program committee of the International Joint conference on Artificial Intelligence (IJCAI), International Conference on Algorithmic Decision Theory (IADT), and the American Association of Artificial Intelligence (AAAI) track on New Scientific and Technical Advances in Research (AAAI NECTAR).
– From 2003 to 2007, she was the president of the International Association for Constraint Programming (ACP).
– In 2008 she was elected an ECCAI fellow, for "her significant contributions to the field of Artificial Intelligence". ECCAI is the main AI organization in Europe.
– In 2010 she was awarded the 1st ACP (association for constraint programming) distinguished service award, for "contributions to the field of constraint programming through sustained service supporting the formation of the Association for Constraint Programming and the promotion of the field".
– In 2012 she was elected a AAAI fellow.

- In 2013 she was elected a AAAI councilor.
- Since August 2013 she is the president of the IJCAI board of trustees.
- She is in the scientific advisory board of the FBK (Fondazione Bruno Kessler, Trento, Italy).
- She is one of the mentors of the Faculty on Computer Science of the University of Bolzano, Italy.
- She is in the scientific advisory board of the Future of Life Institute, Cambridge, MA.

Publications:

- About 170 articles in international journals, proceedings of international conferences or workshops, and as book chapters. One book co-authored, 16 volumes co-edited, between conference proceedings, collections of contributions, and special issue of international journals.
- H-index: 35, i10-index: 89.
- Publication list on DBLP: `http://dblp.uni-trier.de/pers/hd/r/Rossi:Francesca`.
- Google scholar profile: `http://scholar.google.com/citations?user=Zp41vKYAAAAJ&hl=en`.

Research monograph:

- "A Short Introduction to Preferences: Between Artificial Intelligence and Social Choice", Francesca Rossi, Kristen Brent Venable, Toby Walsh, Synthesis Lectures on Artificial Intelligence and Machine Learning, Morgan & Claypool Publishers, July 2011.

Editions:

- "Handbook of constraint programming." Editors: P. van Beek, F. Rossi, and T. Walsh. Elsevier, 2006.
- Six volumes on "Recent advances in constraints", Springer: LNAI 3010, 2004; LNAI 3419, 2005; LNAI 3978, 2006; LNAI 4651, 2007; LNAI 5129, 2008; LNAI 5655, 2009.
- Special issues:
  - "Constraint-based approaches to preference modelling and reasoning", Editors: Pedro Meseguer, Francesca Rossi, Thomas Schiex, Constraints, vol. 15, 2010.
  - "Preferences and Soft Constraints." Guest editors: S. Bistarelli and F. Rossi, Journal of Heuristics, vol. 12, n.4/5, 2006.
  - Best papers from CP 2003. Guest editor: F. Rossi, Constraints, Vol. 10, No. 2, 2005.
  - "Preferences in AI and CP." Editors: U. Junker, J. Delgrande, J. Doyle, F. Rossi, T. Schaub, Computational Intelligence, Blackwell Publishing, vol. 20, issue 2, May 2004.
  - "Soft constraints." Guest editors: F. Rossi, P. Codognet, Constraints journal, Kluwer, vol. 8, n. 1, January 2003.
- Proceedings:
  - Proc. IJCAI 2013, Editor: F. Rossi, AAAI Press, 2013.
  - Proc. ADT 2009. Editors: A. Tsoukias, F. Rossi, Springer LNAI 5783, 2009.
  - Proc. CP 2003, Editor: F. Rossi, LNCS 2833, Springer LNCS 2833, 2003.

Current research projects:

– Incorporating patients' preferences in kidney transplant decision protocols, University of Padova, 2014-2016, 128,000 euros.
– Safety constraints and ethical principles in collective decision making systems, Future of Life Institute, 2015-2018, $ 275,000.