

# Felipe Meneguzzi

PhD

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## Education

- 2005–2009 **PhD in Computer Science**, *King's College London/University of Southampton*, UK.
- 2002–2003 **MSc in Computer Science**, *PUCRS*, Porto Alegre, Brazil.  
Performance Coefficient: 9.41 (out of 10) - 1st of 19 students
- 1997–2001 **BSc in Computer Science**, *PUCRS*, Porto Alegre, Brazil.  
Performance Coefficient: 9.15 (out of 10) - 1st of 70 students

## PhD thesis

- title Extending agent languages for multiagent domains
- supervisor Professor Michael Luck
- description Introduction of planning, cooperative planning, motivated reasoning and normative processing in an AgentSpeak(L) (an agent language) interpreter. Prototype was an extension of the Jason AgentSpeak(L) interpreter, and included a Java planning algorithm, and a scripted agent environment middleware.

## Master thesis

- title *Planejamento Proposicional em Agentes BDI (Propositional Planning in BDI Agents)*
- supervisor Dr. Avelino Zorzo
- description Introduction of planning capabilities to a logic-based agent system. Prototype included a C++ implementation of Graphplan.

## Diploma thesis

- title *ICE: Kernel de Agentes para Jogos (ICE: Agent Kernel for Games)*
- supervisor Dr. Michael da Costa Móra
- description Implementation of a C++ agent interpreter, the demo included an OpenGL 2D game that used the agent interpreter to control in-game characters.

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## Employment

### Academia

- 2011-current **Project Scientist**, *Carnegie Mellon University*, Pittsburgh, USA.  
Work in the joint US/UK International Technology Alliance (ITA) defence project  
Current work focuses presentation of uncertain semantic data coming from multiple data sources.  
Supervision and research work for the plan recognition component as part of the Google AI Challenge.
- 2009-2011 **Postdoctoral Research Fellow**, *Carnegie Mellon University*, Pittsburgh, USA.  
Work in the joint US/UK International Technology Alliance (ITA) defence project  
Current work focuses on the formal relation between deterministic planning based on HTNs and stochastic planning based on MDPs and POMDPs. Practical applications being implemented include Proactive Assistant Agents that use plan recognition and constraint-based scheduling to anticipate and pre-fetch information for military planners.
- 2007-2009 **Part-time Research Assistant**, *King's College London*, London, UK.  
Contract Based e-Business Systems Engineering for Robust, Verifiable Cross-Organisational Business Applications  
European Commission Framework 6 IST project  
I was responsible for designing a framework for representing, and reasoning about norms and contracts. I also aided in the implementation of a contract monitoring component, and wrote and co-wrote a number of publications disseminating our results.
- 2003-2004 **Research Assistant**, *Pontificia Universidade Catolica do RS*, Porto Alegre, Brazil.  
Work in an HP-funded project  
I led a team of 3 people doing research on digital publishing tools and variable data printing. I also led the implementation of an XSL-FO (a TeX-like XML language) typesetter that lays out text on multiple arbitrarily shaped areas spanning multiple pages.
- 2000-2003 **Research Assistant**, *Pontificia Universidade Catolica do RS*, Porto Alegre, Brazil.  
Work in an HP-funded project  
Research on an embedded Linux distribution used for hardware diagnostics.  
Fulltime work while in MSc

### Industry

- 2004-2005 **Software Engineer**, *Hewlett-Packard*, Porto Alegre, Brazil.  
Imaging and Printing Labs  
Managed a development team of 6 software engineers  
Responsible for software design and releases of the (among other projects) productised version of the research developed during my work at PUCRS.

### Industry Projects

- 2005 **Technical Leader**, *Hewlett Packard Brazil*, Implementation of web-based manager software for the HP Forms Automation System.  
Forms Automation System at HP
- 2005 **Technical Leader**, *Hewlett Packard Brazil*, Integration of variable data printing XSL-FO processor within a print station software (collaboration with Hewlett Packard Vancouver).

- 2004-2005 **Software Engineer**, *Hewlett Packard Brazil*, Implementation of an advanced prototype of the Pluribus project (collaboration with HP Labs Palo Alto) – Prototype consisted of a camera-projector system that adjusts multiple projectors output at the pixel level to maximise lumens and resolution of a single, combined, image. Implementation took advantage of GPU shaders to achieve real-time image adjustment.  
Pluribus at HP
- 2003-2004 **Research Assistant**, *PUCRS/Hewlett Packard Brazil*, Research on arbitrarily shaped text-layout for an XSL-FO processor within the Anvil project (collaboration with HP Labs Bristol) – Prototype consisted of a re-implementation of the FOP XSL-FO typesetter that uses Java2D graphics primitives calculate text positioning.  
HP Labs Technical Report
- 2003 **Research Assistant**, *PUCRS/Hewlett Packard Brazil*, Integration of an embedded Java VM within an embedded Linux platform (collaboration with Hewlett Packard Boise).
- 2001-2002 **Research Assistant**, *PUCRS/Hewlett Packard Brazil*, Implementation of an embedded Linux (collaboration with Hewlett Packard Brazil).

### Teaching

- 2007–2008 **Tutor**, *King's College London*, London, UK.  
Small Group Tutorials for Undergraduate Students on Computer Systems, Programming Practice, Programming Concepts, Programming Applications, Distributed Systems and Software Engineering  
Tutorials for MSc Students on Internet Systems
- 2006–2007 **Tutor**, *King's College London*, London, UK.  
Small Group Tutorials for Undergraduate Students on Programming Applications, Distributed Systems and Software Engineering  
Tutorials for MSc Students on Internet Systems
- 2006–2007 **Lab Assistant**, *King's College London*, London, UK.  
Assisted Java Programming Labs
- 2005–2006 **Lab Assistant**, *University of Southampton*, Southampton, UK.  
Assisted Java Programming Labs
- 2003 **Lecturer**, *PUCRS*, Porto Alegre, Brazil.  
Taught Introduction to Computing (History of Computer Science, Binary System, etc)

### Software Projects / Side Projects

- Java **Anytime Cognition**, *ANTICO is a proof-of-concept demo of a web-based proactive information assistant I helped implement while at Carnegie Mellon University*, it uses plan/intention recognition and probabilistic plan prediction to detect a human user's future information needs in order to provide time-sensitive information and guidance.  
Demo available at Youtube <http://www.youtube.com/watch?v=2aHH4Ip0pvI>
- Java **Java game engine**, *Development of a full game engine using Java*, both game engine core and graphics engine were completed, small platform game developed as proof of concept.  
Source code and program available at Software at Meneguzzi.eu
- Java **Document duplicate detector**, *Development of a detector for duplicate documents within a folder structure*, detects duplicate files through various metrics including file attributes and PDF content, used to optimise personal PS/PDF paper database.  
Source code and program available at Software at Meneguzzi.eu

C++ **Graphplan**, *Development of an object oriented Graphplan implementations in C++ and Java*, released as open-source project, currently used in an AI module at the university of Michigan.  
Available at Emplan at Sourceforge

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## Awards

2001 Best performing undergraduate student award.

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## Grants and Funding

2009 **Scholarship**, *Travel scholarship to attend AAMAS '09*, International Foundation for Autonomous Agents and Multiagent Systems (IFAAMAS), USA.

2005-2008 **Scholarship**, *Fully funded PhD scholarship in the UK*, Coordenação de Aperfeiçoamento de Pessoal de Nível Superior (CAPES), Brazil.

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## Committees

2011 **Program Committee**, *Twenty Second International Joint Conference on Artificial Intelligence (IJCAI)*, Barcelona, Spain.

2011 **Program Committee**, *Tenth International Conference on Autonomous Agents and Multiagent Systems (AAMAS)*, Taipei, Taiwan.

2011 **Program Committee**, *The Fourteenth International Conference on Principles and Practice of Multi-Agent Systems*, Wollongong, Australia.

2011 **Program Committee**, *ILE Track of the 26th ACM Symposium On Applied Computing (SAC)*, Taichung, Taiwan.

2011 **Program Committee**, *Workshop on Agent Based Computing: from Model to Implementation VIII (ABC:MI)*, Szczecin, Poland.

2010 **General and Programme Chair**, *AAAI Fall Symposium on Proactive Assistant Agents*, Arlington, VA, USA.

2010 **Program Committee**, *The International Conference on Ambient Systems, Networks and Technologies*, Paris, France.

2010 **Program Committee**, *The Thirteenth International Conference on Principles and Practice of Multi-Agent Systems*, Kolkata, India.

2010 **Program Committee**, *Second Conference on Computational Intelligence in Networks and Systems*, Thessaloniki, Greece.

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## Reviewing

**Reviewer**, *The Knowledge Engineering Review (KER)*, Cambridge.

**Reviewer**, *Theoretical Computer Science (TCS)*, Elsevier.

**Reviewer**, *Journal of Autonomous Agents and Multi-Agent Systems (JAAMAS)*, Springer.

**Reviewer**, *Web Intelligence and Agent Systems: An International Journal*, IOS Press.

**Reviewer**, *Ninth International Conference on Autonomous Agents and Multiagent Systems (AAMAS)*, Toronto, Canada.

**Reviewer**, *Eight International Conference on Autonomous Agents and Multiagent Systems (AAMAS)*, Budapest, Hungary.

**Reviewer**, *Nineteenth Brazilian Symposium on Artificial Intelligence (SBIA)*, Salvador, Brazil.

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## Presentations

- 2010 **Invited talk**, *Motivations and Goal-Directed Autonomy.*, 2010 AAAI Workshop on Goal-Directed Autonomy, Atlanta, GA, USA.
- 2008 **Colloquium**, *Creating and reusing plans in agent languages*, KCL Department of Computer Science Colloquiums, London, UK.
- 2006 **Paper Presentation**, *Motivations and declarative goals as cornerstones of autonomy*, Student Session of the Eighth European Agent Systems Summer School, Annecy, France.
- 2004 **Invited Tutorial**, *Game Development Using Java*, RS Java Users Group, Porto Alegre, Brazil.

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## Languages

Portuguese	<b>Native Speaker</b>
English	<b>Fluent</b>
German	<b>Average</b>
Italian	<b>Average</b>
Spanish	<b>Average</b>

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## Publications

### Patents

- 2005 **WO/2005/109230**, *Data Processing System and Method*, Optimization of XSL-FO generated documents.  
HEWLETT-PACKARD DEVELOPMENT COMPANY, L.P. [US/US] DA SILVA, Ana Cristina Benso [BR/BR] DE OLIVEIRA, João Batista Souza [BR/BR] **MENEGUZZI, Felipe Rech** [BR/BR] MEIRELLES, Leonardo Luceiro [BR/BR]
- 2005 **WO/2005/109231**, *Data Processing System and Method*, Grouping of elements in the Area Tree phase of XSL-FO rendering.  
HEWLETT-PACKARD DEVELOPMENT COMPANY, L.P. [US/US] DA SILVA, Ana Cristina Benso [BR/BR] DE OLIVEIRA, João Batista Souza [BR/BR] **MENEGUZZI, Felipe Rech** [BR/BR] MEIRELLES, Leonardo Luceiro [BR/BR]

### Journal Papers

**Felipe Meneguzzi**, Avelino Francisco Zorzo, Michael da Costa Móra, and Michael Luck. Incorporating planning into BDI agents. *Scalable Computing: Practice and Experience*, 8(1):15–28, 2007.

Sanjay Modgil, Nir Oren, Nora Faci, **Felipe Meneguzzi**, Simon Miles and Michael Luck. Monitoring Compliance with E-Contracts and Norms. *Journal of Autonomous Agents and Multi-Agent Systems*, (submitted September 2010).

**Felipe Meneguzzi** and Michael Luck. Declarative planning in procedural agent architectures. *IEEE Transactions on Systems, Man and Cybernetics, Part B*, (submitted February 2011).

**Felipe Meneguzzi** Wamberto Vasconcelos, Nir Oren and Michael Luck. BDI Reasoning with Normative Considerations. *Journal of Autonomous Agents and Multi-Agent Systems*, (submitted April 2011).

**Felipe Meneguzzi**, Sanjay Modgil, Nir Oren, Simon Miles, Michael Luck, Nora Faci, Camden Holt and Malcolm Smith. An application of electronic contracting in an aerospace aftercare domain. *Artificial Intelligence*, (submission planned for May 2011).

### Proceedings and Technical Reports

**Felipe Meneguzzi** and Jean Oh. Proactive Assistant Agents: Papers from the AAAI Fall Symposium, published by AAAI Press, ISBN 978-1-57735-489-5, 2010.

### Book Chapters

Simon Miles, Nir Oren, Michael Luck, Sanjay Modgil, **Felipe Meneguzzi**, Nora Faci, Camden Holt and Gary Vickers. Electronic Business Contracts between Services, in *Handbook of Research on P2P and Grid Systems for Service-Oriented Computing: Models, Methodologies and Applications*, published by IGI Global, Chapter 31, 732–746, 2010.

### Invited Papers

**Felipe Meneguzzi**. Motivations and Goal-Directed Autonomy. in *AAAI-10 Workshop on Goal-Directed Autonomy*, 2010.

### Refereed Conference Papers

Jean Oh, **Felipe Meneguzzi**, Katia Sycara and Timothy J. Norman. An agent architecture for prognostic reasoning assistance. In *Proceedings of the Twenty Second International Joint Conference on Artificial Intelligence*, (to appear), 2011

Jean Oh, **Felipe Meneguzzi** and Katia Sycara. Probabilistic Plan Recognition for Intelligent Information Agents: Towards proactive software assistant agents. In *Proceedings of the Third International Conference on Agents and Artificial Intelligence*, (to appear), 2011

Jean Oh, **Felipe Meneguzzi**, Katia Sycara, Timothy J. Norman and Cheryl Gianmanco. An agent architecture for intelligent information assistance. In *Proceedings of the Fourth Annual Conference of the International Technology Alliance*, 2010

**Felipe Meneguzzi**, Yuqing Tang, Katia Sycara, and Simon Parsons. On representing planning domains under uncertainty. In *Proceedings of the Fourth Annual Conference of the International Technology Alliance*, 2010

**Felipe Meneguzzi**, Nir Oren, and Wamberto Vasconcelos. Using constraints for Norm-aware BDI Agents. In *Proceedings of the Fourth Annual Conference of the International Technology Alliance*, 2010

**Felipe Meneguzzi**, Jean Oh, Katia Sycara, Simon Parsons and Timothy J. Norman. Challenges in anticipatory information management under network constraints. In *Proceedings of the Fourth Annual Conference of the International Technology Alliance*, 2010

**Felipe Meneguzzi**, Jean Oh and Katia Sycara. Intelligent information assistance for coalition operations. In *Knowledge Systems for Coalition Operations*, 2010.

**Felipe Meneguzzi**, Sanjay Modgil, Nir Oren, Simon Miles, Michael Luck, Nora Faci, Camden Holt and Malcolm Smith. Monitoring and Explanation of Contract Execution: A Case Study in the Aerospace Domain. In *Proceedings of the Eighth International Conference on Autonomous Agents and Multiagent Systems – Industrial Track*, pages 77–84, 2009.

**Felipe Meneguzzi** and Michael Luck. Norm-based behaviour modification in BDI agents. In *Proceedings of the Eighth International Conference on Autonomous Agents and Multiagent Systems*, pages 177–184, 2009.

Sanjay Modgil, Noura Faci, **Felipe Meneguzzi**, Nir Oren, Simon Miles and Michael Luck. A Framework for Monitoring Agent-Based Normative Systems. In *Proceedings of the Eighth International Conference on Autonomous Agents and Multiagent Systems*, pages 153–160, 2009.

**Felipe Meneguzzi**, Simon Miles, Camden Holt, Michael Luck, Nir Oren, Nora Faci, and Martin Kollingbaum. Electronic contracting in aircraft aftercare: A case study. In *Proceedings of the Seventh International Conference on Autonomous Agents and Multiagent Systems – Industrial Track*, pages 63–70, 2008.

**Felipe Meneguzzi** and Michael Luck. Motivations as an abstraction of meta-level reasoning. In Hans-Dieter Burkhard, Gabriela Lindemann, Rineke Verbrugge, and László Varga, editors, *Proceedings of the Fifth International Central and Eastern European Conference on Multi-Agent Systems*, volume 4696 of *Lecture Notes in Artificial Intelligence*, pages 204–214. Springer, 2007.

Ana Cristina B. da Silva, Joao B. S. de Oliveira, Fernando T. M. Mano, Thiago B. Silva, Leonardo L. Meirelles, **Felipe R. Meneguzzi**, and Fabio Giannetti. Support for arbitrary regions in XSL-FO. In *Proceedings of the 2005 ACM Symposium on Document Engineering*, pages 64–73. ACM Press, 2005.

Avelino Francisco Zorzo and **Felipe Rech Meneguzzi**. An agent model for fault-tolerant systems. In *Proceedings of the 2005 ACM Symposium on Applied Computing*, pages 60–65. ACM Press, 2005.

**Felipe Rech Meneguzzi**, Leonardo Luceiro Meirelles, Fernando Tarlá Martins Mano, Ana Cristina Benso da Silva, and João Batista de Souza Oliveira. Strategies for document optimization in digital publishing. In *Proceedings of the 2004 ACM Symposium on Document Engineering*, pages 163–170. ACM Press, 2004.

**Felipe Rech Meneguzzi**, Avelino Francisco Zorzo and Michael da Costa Móra. Propositional Planning in BDI Agents. In *Proceedings of the 2004 ACM Symposium on Applied Computing*, pages 58–63. ACM Press, 2004.

### Refereed Workshop Papers

**Felipe Meneguzzi**, Yuqing Tang, Katia Sycara, and Simon Parsons. An approach to generate MDPs using HTN representations. In *Decision Making in Partially Observable, Uncertain Worlds: Exploring Insights from Multiple Communities.*, (to appear), 2011

Nir Oren, Wamberto Vasconcelos, **Felipe Meneguzzi** and Michael Luck. Acting on Norm Constrained Plans. In *Computational Logic in Multi-Agent Systems (CLIMA XII)*, (to appear), 2011

Jean Oh, **Felipe Meneguzzi**, Katia Sycara and Timothy J. Norman. Prognostic agent assistance for norm-compliant coalition planning. In *Second International Workshop on Infrastructures and Tools for Multiagent Systems*, (to appear), 2011

**Felipe Meneguzzi**, Simon Miles, Michael Luck, Sanjay Modgil, Nir Oren, Camden Holt and Malcolm Smith. A contract-based system for aerospace aftercare. In Jesus E. Gabaldon and Javier Vazquez-Salceda, editors, *Proceedings of the Workshop on Technological trends in Enterprise Systems for SMEs and large enterprises: Heading towards the Future Internet*, 2009.

**Felipe Meneguzzi** and Michael Luck. Interaction among agents that plan. In Bernhard Jung, Fabien Michel, Alessandro Ricci, and Paolo Petta, editors, *Proceedings of the Sixth International Workshop: From Agent Theory to Agent Implementation*, pages 133–140, 2008.

**Felipe Meneguzzi**. Extending agent languages for autonomy. In *Proceedings of the Sixth International Joint Conference on Autonomous Agents and Multiagent Systems: Mentoring Program*, pages 1744–1745, 2008.

**Felipe Meneguzzi** and Michael Luck. Leveraging new plans in AgentSpeak(PL). In Matteo Baldoni, Tran Cao Son, M. Birna van Riemsdijk, and Michael Winikoff, editors, *Proceedings of the Sixth Workshop on Declarative Agent Languages*, pages 63–78, 2008.

Noura Faci, Sanjay Modgil, Nir Oren, **Felipe Meneguzzi**, Simon Miles, and Michael Luck. Towards a monitoring framework for agent-based contract systems. In Matthias Klusch, Michal Pechoucek, and Axel Polleres, editors, *Proceedings of the Twelfth International Workshop on Cooperative Information Agents*, 2008.

**Felipe Meneguzzi** and Michael Luck. Composing high-level plans for declarative agent programming. In Matteo Baldoni, Tran Cao Son, M. Birna van Riemsdijk, and Michael Winikoff, editors, *Proceedings of the Fifth Workshop on Declarative Agent Languages and Technologies*, volume 4897 of *Lecture Notes in Computer Science*, pages 69–85. Springer, 2007.

**Felipe Meneguzzi**. Motivations and declarative goals as cornerstones of autonomy. In *Student Session of the Eighth European Agent Systems Summer School*, 2006.

**Felipe Rech Meneguzzi**, Paulo Henrique de Souza Schneider, Thais Christina Webber dos Santos, and Michael da Costa Móra. Ice: An agent-based kernel for games. In *Proceedings of the Third Brazilian Symposium on Games and Digital Entertainment*, 2004.

**Felipe Rech Meneguzzi**. Modelling fault-tolerant systems using BDI agents. In Francisco Brasileiro and Avelino Francisco Zorzo, editors, *Proceedings of the Second Workshop on Theses and Dissertations on Dependable Computing*, pages 19–24, São Paulo, Brazil, 2003. EPUSP.

Andrei Oliveira da Silva, **Felipe Rech Meneguzzi**, Paulo Henrique de Souza Schneider, Rodrigo Borges Barcelos, Vicente Oberto Rodrigues, Daniel Waldman and Ana Cristina Benso da Silva. Providing Printing Web Services. In *Proceedings of the 5th International Workshop on Networked Appliances*, pages 17–21, Liverpool, UK, 2002. IEEE.

### Refereed Conference Posters/ Extended Abstracts

Yuqing Tang, **Felipe Meneguzzi**, Simon Parsons and Katia Sycara. Probabilistic Hierarchical Planning over MDPs. In *Proceedings of the Tenth International Conference on Autonomous Agents and Multiagent Systems*, pages 1143–1144, 2011

Jean Oh, **Felipe Meneguzzi**, Katia Sycara and Timothy J. Norman. Prognostic normative reasoning in coalition planning. In *Proceedings of the Tenth International Conference on Autonomous Agents and Multiagent Systems*, pages 1233-123, 2011

Jean Oh, **Felipe Meneguzzi** and Katia Sycara. ANTIPA: an agent architecture for intelligent information assistance. In *Proceedings of the Nineteenth European Conference on Artificial Intelligence*, 1055-1056, 2010

Ana Cristina B. da Silva, Joao B. S. de Oliveira, Fernando T. M. Mano, Thiago B. Silva, Leonardo L. Meirelles, **Felipe R. Meneguzzi**, and Fabio Giannetti. Support for arbitrary regions in XSL-FO: a proposal for extending XSL-FO semantics and processing model. In *Special interest tracks and posters of the 14th international conference on World Wide Web*, pages 1066–1067, New York, NY, USA, 2005. ACM.

**Felipe R. Meneguzzi**, Avelino F. Zorzo, and Michael C. Mora. Mapping mental states into propositional planning. In *Proceedings of the Third International Joint Conference on Autonomous Agents and Multiagent Systems*, pages 1514–1515, 2004.

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## Referees

**Prof. Michael Luck**, *Department of Informatics – King’s College London, Strand, London WC2R 2LS, United Kingdom.*

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**Prof. Katia Sycara**, *Robotics Institute – Carnegie Mellon University, 5000 Forbes Avenue – NSH 1602D, Pittsburgh, PA 15213, United States.*

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**Prof. Simon Parsons**, *Department of Computer and Information Science – Brooklyn College – City University of New York, New York, NY 11210, United States.*

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**Dr. Wamberto Vasconcelos**, *Department of Computing Science – University of Aberdeen, Aberdeen AB24 3UE, United Kingdom.*

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**Fabio Giannetti**, *Hewlett Packard Laboratories – Hewlett-Packard, 1501 Page Mill Road, Palo Alto, CA 94304, United States.*

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**Dr. Avelino Zorzo**, *Head of the School of Informatics, Faculdade de Informática – Pontifícia Universidade Católica do Rio Grande do Sul, Porto Alegre 90619-900, Brazil.*

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**Ricardo Pianta**, *Business Strategy Manager – Hewlett-Packard, Porto Alegre 90160-090, Brazil.*

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