Cristian Ruz

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Academic Formation

- **Doctorat en Informatique** — Nice, France
  Université de Nice-Sophia Antipolis — *2008-2011*
  - Thesis Subject: Autonomic Monitoring and Management of Component-based Services
  - Advisor: Françoise Baude. Jury: Pr. Philippe Lalanda, Pr. Lionel Seinturier (reviewers), Dr. Romain Rouvoy (co-reviewer), Pr. Mireille Blay (head), Dr. Luc Bellissard (examiner)
  - Date: June 23rd, 2011
  - Funding: INRIA-Conicyt scholarship
  - Thesis developed at INRIA Sophia Antipolis - Méditerranée

- **Magister en Ciencias de la Ingeniería, Esp. Computación** — Santiago, Chile
  Pontificia Universidad Católica de Chile — *2002-2004*
  - Thesis Subject: History-based Page Prefetching for Sotfware Distributed Shared Memory Systems
  - Advisors: Yadran Eterovic, Pontificia Universidad Católica de Chile; José M. Piquer, Universidad de Chile
  - Aproved with Maximum Distinction

- **Ingeniero Civil de Computación** — Santiago, Chile
  Pontificia Universidad Católica de Chile — *1997-2004*

- **Licenciado en Ciencias de la Ingeniería** — Santiago, Chile
  Pontificia Universidad Católica de Chile — *1997-2001*

Academic Experience and Teaching

- **Pontificia Universidad Católica de Chile** — Santiago, Chile
  Fulltime Adjunct Assistant Professor — *2015-*
  - Distributed Operating Systems, Operating Systems and Networks, Introduction to Programming

- **Pontificia Universidad Católica de Chile** — Santiago, Chile
  Part-Time Adjunct Assistant Professor — *2013-2014*
  - Distributed Operating Systems, Operating Systems and Networks

- **Universidad Diego Portales** — Santiago, Chile
  Adjunct Instructor Professor — *2005-2007*

- Distributed Systems, Compilers, Design and Analysis of Algoritmos, Data Structures, Computing I, II, III
- Teaching Award from School of Informatics, 2007

- **Pontificia Universidad Católica de Chile** <div align="right">Santiago, Chile</div>
  Research Student <div align="right">2001-2003</div>
  - Design and implementation of memory consistency protocols and multithreaded mutual exclusion algorithms for the DSM-PEPE distributed shared memory system

Work Experience

- **Research and Development Engineer** <div align="right">Pontificia Universidad Católica de Chile</div>
  FONDEF D10I1054 <div align="right">2012 – 2014</div>
  - Developement of web interfaces for display of heatmaps and statistics of person location, densities, fluxes and trajectories in retail stores
  - Integration of algorithms for visual person recognition and tracking in final tool
  - FONDEF D10I1054 Project: "Medición de flujos y densidades espaciales en tiendas de retail utilizando múltiples cámaras

- **Ingenieur Expert** <div align="right">INRIA Sophia Antipolis Méditerranée, France</div>
  SPINNAKER Project <div align="right">2011 – 2012</div>
  - Solution development for deployment of a monitoring and self-managing sensors network infrastructure
  - SPINNAKER was an academy-industry integration project with french funding (OSEO) for the development of a large-scale sensor network based on RFID: http://www.spinnaker-rfid.com/

- **Academic Coordinator** <div align="right">Universidad Diego Portales</div>
  Escuela de Ingeniería Informática y Telecomunicaciones <div align="right">2006 – 2007</div>
  - Planification of academic schedules, evaluations, and coordination of teachers
  - Participation in the acreditation process of professional degree: Ingeniería Informática y Telecomunicaciones, 2007, approved for 4 years

Publications

Journal Articles

- Matías Ibáñez, **Cristian Ruz**, Ludovic Henrio, Javier Bustos-Jiménez. ***Reconfigurable Applications Using GCMScript***. In IEEE Cloud Computing, Special Issue on Autonomic Cloud. Accepted for publication (to appear), 2015.

- Tatiana Aubonnet, Ludovic Henrio, Soumia Kessal, Oleksandra Kulankhina, Frédéric Lemoine, Eric Madelaine, **Cristian Ruz** and Noëmie Simoni. ***Management of service compositionbased on self-controlled components***. In Journal of Internet Services and Applications, 6:15, DOI: 10.1186/s13174-015-0031-7. 2015. (ISI)

- Françoise Baude, Ludovic Henrio, **Cristian Ruz**. ***Programming distributed and adaptable autonomous components – the GCM/ProActive framework***. In Software: Practice and Experience, DOI: 10.1002/spe.2270. John Wiley & Sons. Vol 45, no. 9, pp 1189-1227. Sep, 2015 (ISI).

- **Cristian Ruz**, Françoise Baude, Bastien Sauvan. ***Using Components to Provide a Flexible Adaptation Loop to Component-based SOA Applications***. In IARIA International Journal on Advances in Intelligent Systems, issn 1942-2679. Vol 5, no. 1 i& 2, July 2012, pp 32-50 Online: http://www.iariajournals.org/intelligent_systems

Conference Articles

- Pablo Espinace, Álvaro Soto, **Cristian Ruz**, Christian Pieringer, Billy Peralta, Domingo Mery. ***Visual Recognition to Access and Analyze People Density and Flow Patterns in Indoor Environments***. In IEEE Winter Conference on Applications of Computer Vision (WACV 2015), Hawaii, USA. January 2015.

- **Cristian Ruz**, Françoise Baude, Bastien Sauvan. ***Flexible Adaptation Loop for Component-based SOA Applications***. In 7th International Conference on Autonomic and Autonomous Systems (ICAS). Venice, Italy. May 2011. ISBN 978-1-61208-006-2. Notes: Acceptance Rate 30%. **Best paper award**.

- Françoise Baude, Imen Filali, Fabrice Huet, Virginie Legrand, Elton Mathias, Philippe Merle, **Cristian Ruz**, Reto Krummenacher, Elena Simperl, Christophe Hammerling, and Jean-Pierre Lorre. ***ESB federation for large-scale SOA***. In Proceedings of the 2010 ACM Symposium on Applied Computing (SAC '10). ACM, New York, NY, USA, 2459-2466. DOI=10.1145/1774088.1774597. March 2010. Note: Acceptance Rate 26.9%.

- **Cristian Ruz**, Françoise Baude. ***Enabling SLA monitoring for component-based SOA applications***. SCCC 2009. XXVIII International Conference of the Chilean Computer Society, November 2009.

- Federico Meza, **Cristian Ruz**. ***The Thread-migration mechanism of DSM-PEPE***. ICA3PP 2007, 7th International Conference on Algorithms and Architectures for Parallel Processing, Hangzhou, China, June 2007. Springer Lecture Notes in Computer Science 4494: 177-187. (ISI)

- Christian F. Orellana, **Cristian Ruz**, Yadran Eterovic. ***Self-stabilizing deadlock detection under the OR requirement model***. EURO-PAR 2006, Parallel Processing, Dresden, Germany, August 2006. Springer-Verlag Lecture Notes in Computer Science 4128: 559-570. (ISI)

- **Cristian Ruz**, José M. Piquer. ***Searching an Optimal History Size for History-Based Page Prefetching on Software DSM Systems***. High Performance Computing and Communications, HPCC 2005, Sorrento, Italy, September 2005. Springer-Verlag Lecture Notes in Computer Science 3726: 133-142. (ISI)

- Federico Meza, Álvaro E. Campos, **Cristian Ruz**. ***On the design and implementation of a portable DSM system for low-cost multicomputers***. International Conference on Computational Science and its Applications, ICCSA 2003, Montreal, Canada, May 2003. Springer-Verlag Lecture Notes in Computer Science 2667: 967-976. (ISI)

International Workshops (with review process, colocated with conferences)

- **Cristian Ruz**, Françoise Baude, Bastien Sauvan, Adrian Mos, Alain Boulze. ***Flexible SOA Lifecycle on the Cloud Using SCA***. In 3rd International Workshop on Service-oriented Enterprise Architecture for Enterprise Engineering (SoEA4EE 2011), colocated with EDOC 2011. Helsinki, Finland. August 2011. ISBN 978-0-7695-4426-7.

- **Cristian Ruz**, Françoise Baude, Bastien Sauvan. ***Component-based generic approach for reconfigurable management of component-based SOA applications***. In Proceedings of the 3rd Workshop on Monitoring, Adaptation and Beyond (MONA+), colocated with ECOWS 2010. Ayia-Napa, Cyprus. December 2010.

- **Cristian Ruz**, Françoise Baude, Bastien Sauvan. ***Enabling SLA Monitoring for Component-Based SOA Applications – A Component-Based Approach***. In 36th EUROMICRO Conference on Software Engineering and Advanced Applications (SEAA) – Work in Progress Session. Lille, France. September 2010.

Local Workshops (with review process)

- Karen Palma, **Cristian Ruz**, Yadran Eterovic, José M. Murillo. ***Aplicando orientación a aspectos para mejorar el diseño de un sistema de memoria compartida distribuida***. (*Applying an aspect oriented approach to improve the design of a distributed shared memory system.*) (Spanish) VIII Workshop de Sistemas Distribuidos y Paralelismo, Arica, Chile, November 2004.

- Jesús Figueroa, Álvaro E. Campos, Federico Meza, **Cristian Ruz**. ***Migración de threads en un sistema de memoria compartida distribuida sobre un multicomputador homogéneo***. (*Thread migration on a distributed shared memory system over an homogeneus multicomputer.*) (Spanish) VII Workshop de Sistemas Distribuidos y Paralelismo, Chillán, Chile, November 2003.

Technical Reports

- **Cristian Ruz**, Françoise Baude, Virginie Legrand-Contes. ***Towards Grid Monitoring and deployment in Jade, using ProActive***. Technical Report RR-6340 (2007) [inria-00182554 - version 2]

Research Projects

- **Co-Researcher**   Pontificia Universidad Católica de Chile
  FONDEF 1151018 (Conicyt funding)   *2015 – 2017*
  - An indoor mobile robot that uses a large scale visual memory and a visual ontology to recognize objects, actions, and scenes.

- **Research and Development Engineer**   Pontificia Universidad Católica de Chile
  FONDEF D10I1054 (Conicyt funding)   *2012 – 2014*
  - Developement of web interfaces for display of heatmaps and statistics of person location, densities, fluxes and trajectories in retail stores
  - Integration of algorithms for visual person recognition and tracking in final tool
  - FONDEF D10I1054 project: "Medición de flujos y densidades espaciales en tiendas de retail utilizando múltiples cámaras

- **Researcher**   Pontificia Universidad Católica de Chile
  INRIA Associated Team SCADA (INRIA funding)   *2012 – 2014*
  - Researcher in Associated OASIS-NicLabs team SCADA: Safe Composition of Autonomic Distributed Applications
  - Subject: insertion of autonomic behaviours in distributed software components
  - Main results: 1 ISI publication (SPE), 1 ISI publication in review at *Journal of Systems and Software*, 1 co-advise of engineering thesis student
  - https://team.inria.fr/scada/

Research Networks

- **GRIMA: Grupo de Inteligencia de Máquina** Pontificia Universidad Católica de Chile
  2012 – 2014
  - Research on techniques for accelerating machine learning algorithms for visual recognition
  - Implementation and administration of a computing cluster (116 core):
    `http://hercules.ing.puc.cl/ganglia`
  - `http://grima.ing.puc.cl`

- **SCALE Team** INRIA Sophia Antipolis Méditerranée
  2012 – 2014
  - Active collaboration with researchs from INRIA SCALE (prev. OASIS) team: Safe Composition of Autonomous applications with Large-SCALE Execution environment
  - Subject: large-scale autonomic application based on software components, and applications to Big Data
  - `https://team.inria.fr/scale/`

- **Other research center collaborations**
  2012 – 2014
  - NICLabs Research: collaboration on distributed applications
  - NLHPC, National Laboratory for High Performance Comuting: participación como asesor científico en proyecto NLHPC para implementación de infrastructura de cómputo de alto rendimiento.

Research Interests

- Distributed Systems
  - Distributed programming and algorithmos. High Performace Computing. Heterogeneous computing
- Software Systems
  - Distributed and concurrent programming. Operating systems.

Other Activities

- Chief Judge at Chile Site, ACM-ICPC Latin America Programming Contest (2007-2015),
  `http://www.acm-icpc.cl`

- Member of C^{100}: Corporación para el fomento de la Ciencia de la Computación en Colegios,
  `http://www.c-100.cl`

Skills

- Proactivity and interest in collaborative and multidisciplinary projects

- Autonomous learning

- Good background on theoretical computer science

- High technical skills in software development and reverse engineering

  - Advance managament of Linux operating systems and cluster management: Ubuntu, CentOS, schedulers
  - Proficiency in programming languages: C/C++, Java, Python, shell scripting, CUDA/OpenCL, Javascript, PHP
  - Proficiency in software development tools and environments: Eclipse, Git/SVN, LaTeX
  - Database administration: MySQL, PostgreSQL

Personal Background

- **Personal Information**

  - Nationality: Chilean
  - Languages spoken: Spanish (native), English (fluent written and spoken), French (intermediate)