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## RESEARCH INTERESTS

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Ubiquitous Business Processes Management/Composition/Optimization  
Ubiquitous/Urban/Mobile Computing  
Ubiquitous Health (u-Health)  
Self-Adaptive Software Systems & Human Factors in Service Oriented Computing  
Cognitive Resources Aware Spontaneous Service Composition  
Internet of Things

## EDUCATIONAL QUALIFICATIONS

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February 2007 – February 2013  
Ph. D. in Computer Science  
**KAIST – Korea Advanced Institute of Science and Technology**  
([www.kaist.edu/english/](http://www.kaist.edu/english/)), Republic of Korea, Department of Computer Science,  
Web Engineering and Adaptive Software Laboratory ([webeng.kaist.ac.kr](http://webeng.kaist.ac.kr))  
Advisor: In-Young Ko (Ph.D.), [iko@kaist.ac.kr](mailto:iko@kaist.ac.kr), <http://bigbear.kaist.ac.kr/~iko/>

April 2005  
Master Degree in Business Engineering and Information Technology, **University of Chile**, Faculty of Science Physics and Mathematics, Department of Industrial Engineering  
Research area: Business Process Management, Software Engineering, Information Technology, Enterprise Architectures, Knowledge Management

August 2003  
Degree of Industrial Engineering, Major in Information Technology, **University of Chile**, Faculty of Science Physics and Mathematics, Department of Industrial Engineering.

1996-2002  
Bachelor Degree in Engineering Sciences  
**University of Chile**, Faculty of Science Physics and Mathematics, Department of Industrial Engineering.

1994  
Degree of Secondary Studies  
**Instituto Nacional de Chile**

## JOURNALS

(Second Revision) Ko, In-Young; Ko, Han-Gyu; Jimenez-Molina, Angel; Kwon, Jung-Hyun (2015). **SOIoT: Toward A User-centric IoT-based Service Framework**. *ACM Transactions on Internet Technology (TOIT)*. (Journal ISI)

(Published) Jimenez-Molina, Angel; Ko, In-Young (2015). **Cognitive Resource-Aware Unobtrusive Service Provisioning in Ambient Intelligence Environments**. *Journal of Ambient Intelligence and Smart Environments (JAISE)*, 7(1), 37-57, doi: 10.3233/AIS-140299. (Journal ISI, IF = 1.252)

(Published) Jimenez-Molina, Angel; Ko, In-Young (2011). **Spontaneous Task Composition in Urban Computing Environments based on Social, Spatial, and Temporal Aspects**. *Journal of Engineering Applications of Artificial Intelligence (EAAI)*, 24(8), 1446-1460, doi:10.1016/j.engappai.2011.05.006. (Journal ISI, IF = 2.176)

(Published)<sup>1</sup> Giovanna Di Marzo Serugendo, Alfredo A. Villalba Castro, Dimitri Konstantas, Liu Liang, Duan Zheng-yu, Thyagaraju G.S., Umakanth P. Kulkarni, Anil R. Yardi, **Gonzalo Huerta Cánepa, Angel Jiménez Molina, In-Young Ko, Dongman Lee**, Jaewook Jung, Youngjae Kim, Minsoo Hahn, Tatsuya Yamazaki, Tetsuo Toyomura, Takashi Matsuyama, D.B. Kulkarni (2008). **Activity-Based Computing**. *IEEE Pervasive Computing*, 7(2), 58-61, doi:10.1109/MPRV.2008.25. (Journal ISI, IF = 2.672)

## BOOK CHAPTER

(Published) Ko, In-Young; Koo Hyung-Min; Jimenez-Molina, Angel (2010). **User-Centric Web Services for Ubiquitous Computing**. In: Velasquez, J., Jain, L. (Eds.), *Advanced Techniques in Web Intelligence - I*. Vol. 311 of Studies in Computational Intelligence. Springer Berlin / Heidelberg, pp. 167-189.

## INTERNATIONAL REFEREED CONFERENCES

(Accepted for Publication) Sebastián A. Ríos; Jimenez-Molina, Angel (2015). **A Benchmark on Artificial Intelligence Techniques for Automatic Chronic Respiratory Diseases Risk Classification**. *KES-InMED-15 Third International Conference on Innovation in Medicine and Healthcare*.

(Accepted for Publication) Matías Echeverría; Jimenez-Molina, Angel; Sebastián A. Ríos (2015). **A Semantically-based Framework for Continuous u-health Services Provisioning**. *KES '15: Knowledge-Based and Intelligent Information and Engineering Systems*.

(Published) Jimenez-Molina, Angel; Ko, In-Young (2014). **Cognitive Resources-Aware Web Service Selection in Mobile Computing Environments**. In: Companion Proceedings of the 23rd International World Wide Web Conference (WWW)

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<sup>1</sup> Short paper of a work in progress section of the *IEEE Pervasive Computing Magazine*, entitled “Adaptive Activity based Middleware”. Authors in order of appearance in the special issue. <http://www.computer.org/portal/web/csdl/doi/10.1109/MPRV.2008.25>

2014 Companion), ACM 978-1-4503-2745-9/14/04. Seoul, Korea.

(Published) Jimenez-Molina, Angel; Choi, Jang-Ho; Gaete-Villegas, Jorge; Ko, In-Young (2012). **Cognitive Resources Aware Adaptive Web Service Binding and Scheduling**. *The 2012 IEEE/WIC/ACM International Conference on Web Intelligence*. Macau, China

(Published) Jang-Ho Choi, Han-Gyu Ko, Jae-Hyun Cho, Angel Jimenez-Molina, Jorge Gaete, In-Young Ko (2012). **Task-oriented Service Composition for Internet of Things**. Triangle Symposium on Advanced ICT 2012 (TriSAI 2012), Tokyo, Japan

(Published) Jimenez-Molina, Angel; Ko, In-Young (2011). **Cognitive Resource Aware Service Provisioning**. In: *the 2011 IEEE/WIC/ACM International Conferences on Web Intelligence and Intelligent Agent Technology*, pp. 438-444 (Acceptance rate = 19%). Lyon, France

(Published) Jimenez-Molina, Angel; Ko, In-Young (2010). **A Historically-based Task Composition Mechanism to Support Spontaneous Interactions Among Users in Urban Computing Environments**. In: *Proceedings of KES '10: Knowledge-Based and Intelligent Information and Engineering Systems*, LNAI (Lecture Notes in Artificial Intelligence), Volume 6277, 54-63, Springer Berlin/Heidelberg. Cardiff, U.K.

(Published) Jimenez-Molina, Angel; Kang, Byung-Seok; Kim, Jun-Sung; Ko, In-Young (2010). **A Task-oriented Approach to Support Spontaneous Interactions among Users in Urban Computing Environments**. In: *Proceedings of the Pervasive Computing and Communications Workshops (PERCOM Workshops), 2010 8th IEEE International Conference on*, 176 – 182. Mannheim, Germany

(Published) Jimenez-Molina, Angel; Kim, Jun-Sung; Koo, Hyung-Min; Kang, Byung-Seok, Ko; In-Young (2009). **A Semantically-based Task Model and Selection Mechanism in Ubiquitous Computing Environments**. In: *Proceedings of KES '09: Knowledge-Based and Intelligent Information and Engineering Systems*, LNAI (Lecture Notes in Artificial Intelligence), Volume 5712, 829-837, Springer Berlin/Heidelberg. Santiago, Chile

(Published) Jun-Sung Kim; Hyung-Min Koo; Angel Jimenez-Molina; In-Young Ko (2009). **A Task-based Mechanism for Dynamic Service Composition for Group of Users in Ubiquitous Computing Environments**. In: *Proceedings of the 2009 Korean Conference on Software Engineering KCSE'09*. (Paper in Korean)

(Published) Jimenez-Molina, Angel; Rojas, Francisco Arturo; Komi Sitsofe Abotsi; Fahmi Syed Ahsan; In-Young Ko; Dan Hyung Lee; Ho-Jin Choi (2008). **A Knowledge-Based Model for Continuous Software Process Improvement**. In: *Proceedings of the 2008 Korean Conference on Software Engineering KCSE'08*.

(Published) Jimenez-Molina, Angel; Koo, Hyung-Min; Ko, In-Young (2007). **A Template-Based Mechanism for Dynamic Service Composition Based on Context Prediction in Ubicomp Applications**. In: *International Workshop on Intelligent Web Based Tools (IWBT-07) in conjunction with the 19<sup>th</sup> IEEE International Conference on Tools with Artificial Intelligence (ICTAI-07)*. Patras, Greece.

## DOMESTIC MAGAZINE

(Published) Jiménez-Molina, Ángel; Velásquez Silva, Juan D.; Fuentes de la Hoz, Alejandro (2008). **Mejoramiento de la Gestión y Uso de Tics en las Mipymes a Través de Software Libre**. Revista de Ingeniería de Sistemas, Chile, 2008.

## THESIS

(Ph.D Thesis) Cognitive Resource-Aware Dynamic Service Composition in Mobile Computing Environments (successfully defended on November 21th, 2012)

(Master Thesis) Redesign of the Business Process of IT Project Management based upon Knowledge Management (thesis in Spanish)

(Undergraduate Thesis) Analysis, Design and Construction of analytic Business Objects for CRM, Based Upon Pattern Processes for Medium-Sized Enterprises (thesis in Spanish)

## ACADEMIC EXPERIENCE AND FACULTY APPOINTMENTS

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May 2013 - Present: Assistant professor (full-time), Department of Industrial Engineering (DIE), University of Chile.

Courses Offered (DIE):

- Ubiquitous Business Processes (IN7I8 - Master in Business Engineering and Information Technology, MBE)
- Business Process Management (IN5502 - Undergraduate)
- Advanced Technologies for Ubiquitous Business Processes (IN5527 - Undergraduate)
- Information and Communications Technologies for Management (IN3501 - Undergraduate)
- Architecture, Design and Construction of a Business with IT Support (IN73J - Master in Business Engineering and Information Technology, MBE)
- Technological Architecture for Web Applications (IN72J - Master in Business Engineering and Information Technology, MBE)
- Design of Models and Business Process with IT (IN71J - Master in Business Engineering and Information Technology, MBE)
- Object Orientation for an e-business (IN77J - Master in Business Engineering and Information Technology, MBE)

May 2013 - Present: Researcher, Engineering Complex Systems Millennium Institute, (<http://www.sistemasdeingenieria.cl/isci/index.php?seccion=portada>), University of

Chile.

October 2013 – Present : Director and principal investigator, initiation into research Fondecyt project, N° 11130252. *A Cognitive Resource-Aware Mobile Service Framework to Support Human-Computer-Interactions in Ubiquitous Computing Environments.*

May 2014 - Present: Researcher, Business Intelligence Research Centre (<http://www.ceine.cl/equipo/investigadores/>), DIE, University of Chile.

2011: Collaboration to prepare the Innova Chile project proposal: “*Proyecto de I+D Aplicada: Tecnologías de Próxima Generación para la Detección de Copia de Documentos*”. The grant was awarded.

2011, 2012: Future Internet Project, KAIST.

2008, 2011: Urban Computing Middleware Project, KAIST.

My contribution consisted of a scheme for task composition based on social, spatial, and temporal aspects. This scheme considered a bottom-up approach to build user-centric unit-tasks from available services of a space. Multiple experiments at a test bed with sensors and appliances were conducted.

([cds.kaist.ac.kr/cdsn/Projects/UrbanComputingMiddleware](http://cds.kaist.ac.kr/cdsn/Projects/UrbanComputingMiddleware))

2010-2011: Personal Genie Project, KAIST

In this project my contribution consisted of an extension of a template-based approach (developed in our previous work) for task recommendation to assist users in their daily-life activities.

2007-2008: Active Surroundings Project, KAIST.

I was one of the contributors to the design of a task-oriented service framework for ubiquitous computing. In this project I defined a context-based task description model, and a template-based task selection scheme. This scheme considered a top down decomposition of user-centric activities into service-composition patterns, and available services. Multiple experiments at a test bed with sensors and appliances were conducted.

([as.icu.ac.kr](http://as.icu.ac.kr))

Teaching Assistant at KAIST:

- Software Engineering in Korea (Spring 2010, Spring 2011)
- Software Engineering Economics & Management (Spring 2008, Spring 2009)
- Web-based Software Development course (Fall 2007, Spring 2008)
- Data Mining Course (Fall 2007)

2005-2006: Lecturer (Department of Industrial Engineering, University of Chile)

Teaching Assistant (Department of Industrial Engineering, University of Chile):

- 2004-2005-2006: Information Technology II (IN73N), course of the MBA.
- 2004: Technological Architecture for Web Applications (IN72J)

- 2004: Object Orientation for an e-business (IN77J)

2003-2004: lecturer (CIISA Golden Training)

- Business Processes for an e-business
- Object-oriented Web Applications
- Database design for an e-business
- Object-oriented e-business design
- Building an e-business application
- Business Process Redesign

Teaching assistant (Others):

- 2002: Operational Research, Economics Department, Universidad Mayor
- 2000: Calculus I & II, Economics Department, University of Chile
- 1999: Statistics, Economics Department, Universidad Andres Bello

## WORK EXPERIENCE

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2006-2007 (Apr): applied projects at the Division of External Projects (Department of Industrial Engineering, University of Chile)

- Open source software application to small enterprises in Chile. Project funded by the PNUD and SOFOFA.
- Improvement of the IT support for a credit scoring process of INDAP (Chile Ministry of Agriculture).
- Redesign of the building project management process for COPEC

Independent consulting projects:

- 2007 (Jan): Data mining for the Santander Santiago Bank customer's transactions.
- 2006: Design of an integrated technological architecture in ARA, building engineering company.
- 2005: Redesign of the logistic processes, and design and implementation of a supporting e-business application for PROPAL, fruit exporting company (crop estimation methodology, job scheduling, quality control system).
- 2003-2005: Redesign of the business process of IT project management based upon knowledge management, TELEFONICA.

## GRANTS AND AWARDS

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Sep. 2010 – Ago. 2011: KAIST scholarship for Ph.D. (living expenses) and exception of tuition fee for 1 year.

Aug. 2008: best paper award by the Brain Korea (BK) 21 – BK21 (paper published

in the IEEE Pervasive Computing, April-June 2008, with Gonzalo Huerta-Canepa, In-Young Ko, and Dongman Lee)

Sep. 2007 – Feb. 2011: Conicyt scholarship for pursuing the degree of Ph.D at KAIST. Duration of 3.5 years.

Sep. 2007- Sep. 2010: Korea Research Foundation (KRF) scholarship. Duration of 3 years (living expenses)

#### OTHER ACTIVITIES AND INTERESTS

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2009 – 2012: Association of Chilean Students in Korea, Republic of Korea. I'm a co-founder of this association with legal personality, which was created to support the students during their stay in the country. I participated as secretary.

1998-2001: member of the directory of the Instituto Nacional's alumni association

1998: editor of the University of Chile Engineering students magazine (TORQUE)