

# ALEJANDRO RAGO

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## Experience

- 2016 – today **Graduate teaching assistant at Facultad de Ciencias Exactas, UNICEN University, Tandil, Buenos Aires, Argentina.** Department: Departamento de Computación y Sistemas
- 2015 – today **Assistant Researcher in the National Council on Scientific and Technical Research (CONICET), Argentina.**
- 2010 – today **Member of the ISISTAN Research Institute, UNICEN University, Tandil, Buenos Aires, Argentina.**
- 2011 – today **Graduate teaching assistant at Facultad de Ciencias Exactas, UNICEN University, Tandil, Buenos Aires, Argentina.** Courses: *Software Development Methodologies, Aspect-Oriented Software Development, Agile Software Development, Architecture-driven Software Development and Advanced Separation of Concerns*
- 2012 – today **Researcher with Category V in the Teacher Incentive Program of Secretaría de Políticas Universitarias (SPU), UNICEN University, Tandil, Buenos Aires, Argentina.**
- 2009 – 2015 **Scholarship holder in the National Council on Scientific and Technical Research (CONICET), Argentina.**
- 2009 – 2010 **Software Developer at R&D Department in Q4Tech, Tandil, Buenos Aires, Argentina.**

## Languages

- English Reads, writes, listens and speaks fluently
- Spanish Native language

## Education

- sep. 2010 – mar. 2015 **Ph.D. in Computer Sciences, UNICEN University, Tandil, Buenos Aires, Argentina.** Advisors: Prof. Ph.D. Claudia Marcos and Prof. Ph.D. Andrés Díaz Pace - Thesis title: “An Automated Approach for Assisting the Analysis of Textual Requirements”
- sep. 2010 – mar. 2013 **Master in Systems Engineering, UNICEN University, Tandil, Buenos Aires, Argentina.** Advisors: Prof. Ph.D. Claudia Marcos and Prof. Ph.D. Andrés Díaz Pace - Thesis title: “Tool Support for Identifying Crosscutting Concerns in Use Case Specifications”
- mar. 2003 – jun. 2009 **Bachelor in Systems Engineering, UNICEN University, Tandil, Buenos Aires, Argentina.** Advisors: Prof. Ph.D. Claudia Marcos - Thesis title: “A *Semantic-aware Approach for Identifying Early Aspects*”

## Research Projects

- oct. 2016 – sep. 2018 | In charge of Proyecto “*Análisis de Trazabilidad Guiado por Atributos de Calidad*” (PICT-2015-2565) - Directed by Ph.D. Alejandro Rago
- sep. 2015 – dec. 2015 | Member of Proyecto “*Coordinación basada en Agentes para Desarrollo Distribuido de Software centrado en Arquitecturas*” (PIP 11220110100078) - Directed by Ph.D. Andrés Díaz Pace
- jun. 2015 – may 2017 | Member of Proyecto “*Un Método Centrado en Arquitecturas de Software para Líneas de Producto con Soporte de Herramientas*” (PDTS-217) - Directed by Ph.D. Andrés Díaz Pace
- jun. 2015 – may 2017 | Member of Proyecto de Cooperación between Argentina-Alemania (MINCYT-BMBF) “*SQuAT: Técnicas de Búsqueda para Gestión de Tradeoffs entre Atributos de Calidad en Optimización de Diseños de Software*” (AL/14/03) - Directed by Ph.D. Andrés Díaz Pace
- jan. 2014 – dec. 2015 | Member of Proyecto de Cooperación between Argentina-Brasil (MINCYT-CAPES) “*Recomendación de Anomalías de Código relevantes a nivel Arquitectural*” (BR/13/09) - Directed by Ph.D. Andrés Díaz Pace
- jan. 2014 – dec. 2015 | Member of Proyecto “*Estrategias para Mejorar la Evolución y el Mantenimiento de Sistemas*” (CIC-813/137) - Directed by Ph.D. Claudia Marcos
- oct. 2011 – sep. 2013 | Member of Proyecto “*Agentes Inteligentes aplicados a la Gestión de Documentación de Arquitecturas de Software en Redes de Trabajo*” (PICT-2010-2247) - Directed by Ph.D. Andrés Díaz Pace
- jan. 2012 – dec. 2014 | Member of Proyecto de Incentivos “*Asistencia Inteligente a Usuarios en Aplicaciones de Escritorio, Web y Móviles*” (03/C237) - Directed by Ph.D. Alfredo Teyseyre
- jan. 2009 – dec. 2012 | Member of Proyecto de Incentivos “*Métodos Inteligentes para Asistencia Personalizada y Adaptativa a Usuarios*” (03/C197) - Directed by Ph.D. Daniela Godoy

## Publications

### Journals and Magazines

- 2017 | A. Rago, C. Marcos, and A. Diaz-Pace. “Using Semantic Roles to Improve Text Classification in the Requirements Domain”. In: *Language Resources and Evaluation* (Nov. 2017). Indexado SCI - JCR 2016 I.F. 0.738, pp. 1–37. ISSN: 1574-0218. DOI: 10.1007/s10579-017-9406-7
- 2015 | C. Marcos, A. Rago, and J. A. Diaz-Pace. “Mejora de la Especificación de Casos de Uso por Medio de Refactoring”. In: *IEEE Latin America Transactions* 4 (Apr. 2015). Indexado SCI - JCR 2012 I.F. 0.218, pp. 1135–1140. ISSN: 1548-0992. DOI: 10.1109/TLA.2015.7106367
- 2014 | A. Rago, C. Marcos, and A. Diaz-Pace. “Identifying Duplicate Functionality in Textual Use Cases by Aligning Semantic Actions (in press)”. In: *Software and Systems Modeling* (Aug. 2014). Indexado SCI - JCR 2012 I.F. 1.25. ISSN: 1619-1366. DOI: 10.1007/s10270-014-0431-3
- 2014 | A. Rago, C. Marcos, and A. Diaz-Pace. “Assisting Requirements Analysts to Find Latent Concerns with REAssistant”. In: *Automated Software Engineering* 23.2 (June 2016). Indexado SCI - JCR 2012 I.F. 1.4, pp. 219–252. ISSN: 0928-8910. DOI: 10.1007/s10515-014-0156-0
- 2014 | A. Rago et al. “An Approach for Automating Use Case Refactoring (special issue dedicated to ASSE '13)”. In: *Electronic Journal of SADIO* 13.1 (Sept. 2014), pp. 1–15. ISSN: 1514-6774
- 2011 | A. Rago, C. Marcos, and A. Diaz-Pace. “Uncovering Quality-attribute Concerns in Use Case Specifications via Early Aspect Mining”. In: *Requirements Engineering* 18.1 (Mar. 2013). Indexado SCI - JCR 2012 I.F. 1.054, pp. 67–84. ISSN: 0947-3602. DOI: 10.1007/s00766-011-0142-z

## Conference Proceedings

- 2017 J. A. Diaz-Pace et al. “Applying Concession-based Negotiation to Architectural Tradeoffs in SQuAT”. in: *8th Symposium on Software Performance (SSP’17)*. Karlsruhe, Germany, Nov. 2017
- 2017 A. Rago et al. “Distributed Quality-attribute Optimization of Software Architectures”. In: *Proceedings of the 11th Brazilian Symposium on Software Components, Architectures, and Reuse. SBCARS ’17*. Fortaleza, Ceará, Brazil: ACM, 2017, 7:1–7:10. ISBN: 978-1-4503-5325-0. DOI: 10.1145/3132498.3132509
- 2016 J. A. Diaz-Pace et al. “Software architecture optimization: Acting the way human architects do it”. In: *7th Symposium on Software Performance (SSP’16)*. Kiel, Germany, Nov. 2016
- 2016 A. Rago, C. Marcos, and A. Diaz-Pace. “Recuperación de Trazas entre Documentos de Requerimientos y Arquitectura”. In: *Proceedings of the 4th Congreso Argentino de Ingeniería Informática y Sistemas de Información (CoNaIISI ’16)*. Track: Ingeniería de Sistemas y de Software. RIISIC. Salta, Argentina, Nov. 2016
- 2016 A. Rago et al. “TeXTracT: a Web-based Tool for Building NLP-enabled Applications”. In: *Proceedings of the XII Argentine Symposium on Software Engineering, held at Jornadas Argentinas de Computación e Investigación Operativa (JAIIO ’16)*. Buenos Aires, Argentina: SADIO, Sept. 2016, pp. 123–134. ISSN: 1850-2792
- 2016 A. Rago, C. Marcos, and A. Diaz-Pace. “Opportunities for Analyzing Hardware Specifications with NLP Techniques”. In: *3rd Workshop on Design Automation for Understanding Hardware Designs (DUHDe ’16)*. Design, Automation, Test in Europe Conference, and Exhibition (DATE’16). Dresden, Germany, Mar. 2016
- 2015 A. Rago, C. Marcos, and A. Diaz-Pace. “Identifying Duplicate Functionality in Textual Use Cases by Aligning Semantic Actions (SoSyM abstract)”. In: *Proceedings of the ACM/IEEE 18th International Conference on Model Driven Engineering Languages and Systems*. Vol. Main Conference. MODELS’15. ACM/IEEE. Ottawa, ON, Canada: IEEE, Sept. 2015, p. 442
- 2015 A. Rago, C. Marcos, and A. Diaz-Pace. “REAssistant: a Tool for Identifying Crosscutting Concerns in Textual Requirements (Tool Demonstration)”. In: *Proceedings of the Demo and Poster Session co-located with ACM/IEEE 18th International Conference on Model Driven Engineering Languages and Systems*. Vol. 1554. MODELS’15. ACM/IEEE. Ottawa, ON, Canada: CEUR Workshop Proceedings, Sept. 2015, pp. 32–35. ISSN: 1613-0073
- 2014 A. Rago, C. Marcos, and A. Diaz-Pace. “Improving Requirements with NLP Techniques”. In: *2nd School of International Joint Conference on Artificial Intelligence (IJCAI ’14), co-located with the XV Argentine Symposium on Artificial Intelligence, held at Jornadas Argentinas de Computación e Investigación Operativa (JAIIO ’14)*. Buenos Aires, Argentina, Sept. 2014, pp. 7–8. ISSN: 2362-5120
- 2014 M. Maggiori et al. “Towards Recovering Architectural Information from Images of Architectural Diagrams”. In: *Proceedings of the X Argentine Symposium on Software Engineering, held at Jornadas Argentinas de Computación e Investigación Operativa (JAIIO ’14)*. Buenos Aires, Argentina: SADIO, Sept. 2014, pp. 36–50. ISSN: 1850-2792
- 2014 A. Rago, C. Marcos, and A. Diaz-Pace. “Una Comparación de Técnicas de NLP Semánticas para Analizar Casos de Uso”. In: *Proceedings of the 2nd IEEE Biennial Congress of Argentina (ARGENCON ’14)*. IEEE Argentina. San Carlos de Bariloche, Argentina, June 2014, pp. 479–484. ISBN: 978-1-4799-4270-1. ISSN: 1850-0870. DOI: 10.1109/ARGENCON.2014.6868539
- 2013 A. Rago et al. “Un Enfoque para Automatizar la Refactorización de Casos de Uso”. In: *Proceedings of the IX Argentine Symposium on Software Engineering, held at Jornadas Argentinas de Computación e Investigación Operativa (JAIIO ’13)*. SADIO. Cordoba, Argentina, Sept. 2013, pp. 183–197. ISSN: 1850-2792

- 2012 A. Rago, C. Marcos, and A. Diaz-Pace. “Text Analytics for Discovering Concerns in Requirements Documents”. In: *Proceedings of the XIII Argentine Symposium on Software Engineering, held at Jornadas Argentinas de Computación e Investigación Operativa (JAIIO '12)*. SADIO. La Plata, Argentina, Sept. 2012, pp. 185–198. ISSN: 1850-2792
- 2011 A. Rago, C. Marcos, and A. Diaz-Pace. “Can Quality-attribute Requirements be Identified from Early Aspects?” In: *Proceedings of the XII Argentine Symposium on Software Engineering, held at Jornadas Argentinas de Computación e Investigación Operativa (JAIIO '11)*. SADIO. Cordoba, Argentina, Sept. 2011, pp. 192–203. ISSN: 1850-2792
- 2010 A. Rago, C. Marcos, and A. Diaz-Pace. “Facilitando el Diseño de Software mediante una Mejor Separación de Concerns desde Etapas Tempranas”. In: *Proceedings of the XI Argentine Symposium on Software Engineering, held at Jornadas Argentinas de Computación e Investigación Operativa (JAIIO '10)*. SADIO. Buenos Aires, Argentina, Sept. 2010, p. 613. ISSN: 1850-2792
- 2009 A. Rago and C. Marcos. “Técnicas de NLP y WSD Asistiendo Al Desarrollo de Software Orientado a Aspectos”. In: *Proceedings of the X Argentine Symposium on Artificial Intelligence, held at Jornadas Argentinas de Computación e Investigación Operativa (JAIIO '09)*. SADIO. Mar del Plata, Argentina, Sept. 2009, pp. 179–190. ISSN: 1850-2784
- 2009 A. Rago et al. “Early aspect identification from use cases using NLP and WSD techniques”. In: *Proceedings of the Workshop on Early Aspects held at the 15th International Conference on Aspect-Oriented Software Development (AOSD'09)*. ACM. Charlottesville, Virginia, USA, Jan. 2009, pp. 19–24. ISBN: 978-1-60558-456-0. DOI: 10.1145/1509825.1509830
- 2008 A. Rago and C. Marcos. “Análisis Semántico para la Identificación de Aspectos”. In: *Proceedings of the Encuentro Chileno de Computación, held at the International Conference of the Sociedad Chilena de Ciencia de la Computación (SCCC)*. SCCC. Punta Arenas, Chile, Oct. 2008, pp. 6.1–6.10. ISBN: 978-956-319-507-1

## Ongoing Work

- 2017 A. Rago, C. Marcos, and A. Diaz-Pace. “Traceability between Software Documentation in Natural Language (draft)”. In: Nov. 2017, pp. 1–30
- 2017 A. Rago, C. Marcos, and A. Diaz-Pace. “Do Concern Mining Tools Really Help Requirements Analysts? (draft)”. In: Nov. 2016, pp. 1–41

## Reports

- 2013 A. Rago. “Tool Support for Identifying Crosscutting Concerns in Use Case Specifications”. Master Thesis in Systems Engineering. UNICEN University - ISISTAN Research Institute, Mar. 2013
- 2011 A. Rago. *Classification of Domain Actions in Software Requirement Specifications*. Technical Report TR002-2011. Tandil, Argentina: UNICEN University - ISISTAN Research Institute, Sept. 2011
- 2009 A. Rago. “A Semantic-aware Approach for Identifying Early Aspects”. Bachelor Thesis in Systems Engineering. UNICEN University, June 2009

## Awards and Fellowships

- 2017 Best paper award granted at the ACM 11th Brazilian Symposium on Software Components, Architectures, and Reuse (SBCARS'15) - Fortaleza, Ceará, Brazil
- 2016 Designation as *Teaching Assistant* through public contest at UNICEN University, Argentina
- 2016 Designation as *Assistant Researcher* in the National Council on Scientific and Technical Research (CONICET), Argentina
- 2015 Best paper award granted by the journal of *Software & Systems Modeling*, presented at ACM/IEEE 18th International Conference on Model Driven Engineering Languages and Systems (MODELS'15) - Ottawa, ON, Canada
- 2015 Postdoctoral research fellowship grant awarded by the National Council on Scientific and Technical Research (CONICET), Argentina - From April 2015 to March 2017
- 2013 Doctoral research fellowship grant T2 awarded by the National Council on Scientific and Technical Research (CONICET), Argentina - From April 2013 to March 2015
- 2010 Doctoral research fellowship grant T1 awarded by the National Council on Scientific and Technical Research (CONICET), Argentina - From April 2010 to March 2013.
- 2010 Doctoral research fellowship grant awarded by the Committee for Scientific Research (CIC), Argentina - Rejected by incompatibility with CONICET award.

## Talks and Dissertations

- 2017 Guest speaker on the topic “Automated Discovery of Deficiencies in Software Documentation” in the OPUS Research Group (Informatics Department) at Pontificia Universidade Católica Do Rio de Janeiro (PUC-Rio), Brazil
- 2016 Keynote speaker on the topic “Agile Software Development” in the 1st International Congress on “Innovación Tecnológica & Desarrollo de Software” held in Quito, Ecuador
- 2016 Keynote speaker on the topic “Improving Software Evolution” in the 1st International Congress on “Innovación Tecnológica & Desarrollo de Software” held in Quito, Ecuador
- 2016 Guest speaker on the topic “Improving Requirements Engineering with NLP-enabled Tools” in the Master’s course “Requirements Engineering and Software Architecture” at Stuttgart Universität, Germany

## Thesis Advising

- 2016 Main advisor of the bachelor thesis in Systems Engineering of the students Kevin Ruau (finished). Title: “Un Asistente Inteligente para Derivar Escenarios de Atributos de Calidad”.
- 2015 Main advisor of the bachelor thesis in Systems Engineering of students Eduardo Solis and Marcos Basso (finished). Title: “Técnicas de Búsqueda en Documentación Arquitectónica Personalizadas para Stakeholders”.
- 2014 Main advisor of the bachelor thesis in Systems Engineering of students Facundo Ramos and Juan Ignacio Velez (finished). Title: “Arquitectura de Procesamiento de Texto orientada a Servicios Web”.
- 2013 Main advisor of the bachelor thesis in Systems Engineering of students Rodrigo González and German Attanasio (finished). Title: “Detección Automática y Análisis de Trazabilidad entre Documentos de Requerimientos y Diseño”.
- 2012 Co-advisor of the bachelor thesis in Systems Engineering of students Mariano Weimann and Andrés Blanco (in progress). Title: “Detección de Conceptos para el Procesamiento de Documentos de Diseño”.
- 2011 Co-advisor of the bachelor thesis in Systems Engineering of students Paula Frade and Miguel Ruival (finished). Title: “Refactorización de Casos de Uso”.
- 2010 External advisor of the bachelor thesis in Systems Engineering of students Sebastián Villanueva and Francisco Bertoni (finished). Title: “Identificación y Trazabilidad de Atributos de Calidad en Requerimientos”.

## Evaluation Activities

- sep. 2017 Additional reviewer of the XLIII Simposio Latinoamericano de Ingeniería de Software & XIV Argentine Symposium on Software Engineering (ASSE), Simposio Latinoamericano de Ingeniería de Software (CLEI '17) & Jornadas Argentinas de Computación e Investigación Operativa (JAIIO '17).
- aug.2016 Reviewer & member of the artifact evaluation committee of the 4th IEEE Working Conference on Software Visualization (VISSOFT '16), co-located with International Conference on Software Maintenance and Evolution (ICSME '16).
- apr. 2016 Reviewer of the bachelor thesis in Systems Engineering at UNICEN University of students Agustín Rossi & Juan Cruz Ané entitled: “Refactoring de Aplicaciones Móviles Android Utilizando Offloading para el Ahorro de Batería”.
- sep. 2015 Reviewer of the bachelor thesis in Systems Engineering at UNICEN University of students Iñaki Berra & Santiago Zuliani Held entitled: “Refactorización Automatizada para la Eliminación de Brain Methods”.
- oct. 2014 Reviewer of the bachelor thesis in Systems Engineering at UNICEN University of student Martín Pavletic entitled: “Trazabilidad entre Requerimientos, Componentes y Casos de Prueba Asociados”.
- sep. 2013 Additional reviewer of the X Argentine Symposium on Software Engineering (ASSE), Jornadas Argentinas de Computación e Investigación Operativa (JAIIO '13).
- sep. 2011 Additional reviewer of the VIII Argentine Symposium on Software Engineering (ASSE), Jornadas Argentinas de Computación e Investigación Operativa (JAIIO '11).