

Date 08/12/2025

Part A. PERSONAL DATA

First name	Antonio		
Family name	Ruiz Cortés		
Gender (*)	Male	Birth date	dd/mm/ccyy
ID number	XXXX		
e-mail	xxxx@us.es	Web:	https://prisma.us.es/investigador/3804
Open Researcher and Contributor ID (ORCID) (*)	0000-0001-9827-1834		

(*) Mandatory

A.1. Current position

Position	Catedrático de Universidad / Full Professor		
Initial date	02/11/2016		
Institution	Universidad de Sevilla		
Department/Center	Lenguajes y Sistemas Informáticos / E.T.S Ingeniería Informática		
Country	Spain	Phone number	+34 nnnnnnn
Key words	Service engineering, Software engineering, Quantum computing		

A.2. Previous positions (research activity interruptions, indicate total months)

Period	Position/Institution/Country/Interruption cause
2007 – 2016*	Associate Professor (TU), Univ. Sevilla, Spain. *Accredited as CU since 2013
2004 – 2007*	Assistant Professor (TEU), Univ. Sevilla, Spain. * Accredited as TU since 2005
1998 – 2004	Lecturer, Univ. Sevilla, Spain
1996 – 1998	Lecturer –(Part-Time first 12 months), Univ. Huelva, Spain
1992 – 1997	Software Engineer, DEINSA (SME), Spain. *Head of IT Department since 1994
1990 – 1990	IT support – Developer, Informática el Corte Inglés, Spain.

A.3. Education

PhD, Licensed, Graduate	University/Country	Year
PhD in Software Engineering	Univ. Sevilla, Spain. (Extraordinary Award)	2002
M.Sc. in Computer Engineering	Univ. Sevilla, Spain	1996
Graduated in Computer Engineering	Univ. Sevilla, Spain (Extraordinary Award)	1992

Part B. CV SUMMARY (max. 5000 characters, including spaces)

Scientific contributions. His doctoral thesis focused on automatically generating service-level agreements (SLAs) among computational services. As the main contribution, he proposed a formal model for SLAs and a basic catalogue with three operations to analyse them. This analysis was automated by considering each operation in terms of constraints satisfaction optimisation problems (CSOP). Since then, many contributions have been derived from analysing more abstract and complex SLA models, as well as other key aspects of Customer Agreements, such as pricing and service terms. This solution has been adapted into different web service technologies such as WS-Agreement, OWL-S, Linked USDL, and OAS (SLA4OAI).

With his first PhD student, D. Benavides, he proposed the automatic analysis in product lines of service-based systems following a similar approach to the one introduced in his thesis. This time it was applied to Feature Models (FMs), obtaining a six-operation catalogue. Since then, many contributions have been derived from addressing more complex FMs and using them in different domains. The seminal work of this research line is recognised as one of the most influential of CAISE. It has also received the distinction of *Most Influential Paper Award* in SPLC'2017 and VAMOS'2020. An additional work presenting the catalogue of analysis operations, including a literature review, is also considered seminal.

With M. Resinas, as a postdoctoral researcher, he proposed business process management analysis following the same approach. In this case, they used Description Logic instead of CSOP to apply it to business processes with resource information and performance indicators. Since then, contributions have continued to be made derived from addressing configurable process models, automatic SLA analysis for business processes, and predicting compliance or violation of these SLAs. With S. Segura, they were pioneers in generating functional and performance metamorphic tests on FM analysis engines. They also



started a research line, jointly with J.A. Parejo, on Search-Based Software Engineering focused on using metaheuristics to optimise solutions to some hard problems in Software Engineering and automate the replicability of experiments. His latest line of work focuses on Intelligent Contract Management with Coevolutionary Hybrid Intelligence and Quantum Software Engineering, aiming, among other objectives, to develop an analytical framework for managing the demand and capacity of classical, quantum, and hybrid services, driven by the information contained in the pricing.

Community Services. Antonio actively participates in leading international conferences, serving as a PC member in over 100 committees, including ICSE (best reviewer award in 2021), ESEC, CAISE, ICSOC, SERVICES, and SPLC, ranked as class 1/2 in SCIE. He has been general co-chair of SPLC17, industrial track at ICSOC17, SISTEDES18, BPM20, and ICSOC22, and chaired the scientific committees of JCIS08, JISBD12, and ICSOC23. He currently serves on the ICSOC steering committee and previously on those of SPLC and CAISE. He is an associate editor for IEEE Transactions on Service Computing, Computing (Springer), and the Intern. J. on Cooperative Information Systems (2021-2024).

Training, collaborations and leadership. Antonio has (co)-supervised 19 PhD theses, with his students receiving notable recognitions, including the 2023 Early Career Researcher Award by SCIE and Fundación BBVA, a finalist position for the National Award for the Best SISTEDES PhD Thesis, four Extraordinary Doctoral Awards, two Fulbright scholarships, and top placements in the ACM Student Research Competition at ICSE'20 and the ACM SRC Grand Finals 2023. He has led 9 FPI and 3 FPU grants and contributed to the postdoctoral training of 8 researchers, including recipients of Juan de la Cierva and Junta de Andalucía postdoctoral grants. All his trainees continue in research: four in industry (VMWARE, Tenable) and international universities, one at the Univ. of Malaga, and the rest at the Univ. of Seville (3 CU, 12 TU, and 4 in various positions), with two having established their own groups.

Antonio has collaborated with over 60 authors from 20 international groups and hosted A. Fox and S. Dustdar during their sabbaticals. He coordinated the Spanish Network of Excellence in Services Science and Engineering (2015-2021) and served as President of SISTEDES (2018-2022). He leads the Unit of Excellence SCORE at the Univ. of Seville and the Applied Software Engineering research group since its inception and was Deputy Director of the I3US Research Institute (2017-2024).

His achievements include four research sexenios (98-21) and one technology transfer sexenio (98-07). He is an AAIA Fellow, an elected member of the Academia Europaea, and recipient of the National Informatics Award (ARITMEL Award) by SCIE and the FAMA Award for Research and Transfer Career from the University of Seville (2024).

Part C. RELEVANT MERITS (sorted by typology)

C.1. Publications (see instructions) - Citation count source: Google Scholar

1. J. M. Murillo, J. Garcia-Alonso, E. Moguel, ..., Manuel Wimmer: *Quantum Software Engineering: Roadmap and Challenges Ahead*, ACM Trans. on Software Engineering and Methodology, vol. In press, 2025. Pos 12/16. **Co-setting next decade challenges in quantum software engineering**
2. J. Sanchez-Rivero, D. Talaván, J. García-Alonso, A. Ruiz-Cortés, J.M. Murillo: *Automatic generation of efficient oracles: The less-than case*. J. Syst. Softw. 219: 112203 (2025).
3. J. C. Alonso, A. Martin-Lopez, S. Segura, J.M. García, A. Ruiz-Cortés: ARTE: Automated Generation of Realistic Test Inputs for Web APIs. IEEE Trans. Softw. Eng. 49(1): 348-363 (2023).
4. A. Martin-Lopez, S. Segura, C. Muller, A. Ruiz-Cortés. 2021. *Specification and Automated Analysis of Inter-Parameter Dependencies in Web APIs*. IEEE Trans. on Services Comput. 15(4): 2342-2355.
5. S Dustdar, P Fernández, JM García, A Ruiz-Cortés. *Elastic Smart Contracts in Blockchains*. IEEE/CAA Journal of Automatica Sinica 8 (12), 1901-1912. 2021.
6. J. A. Parejo, A. B. Sánchez, S. Segura, A. Ruiz-Cortés, R. E. Lopez-Herrejon, A. Egyed. 2019. *Multi-objective test case prioritisation in highly configurable systems: A case study*, Journal of Systems and Software, 122:287-310. **Special relevance publication award US 2019.**
7. J.M. García, P. Fernández, C. Pedrinaci, M. Resinas, J. Cardoso, A. Ruiz-Cortés. *Modeling Service Level Agreements with Linked USDL Agreement*. IEEE Trans. Services Comput. 10(1):52-65 (2017)
8. A.E. Márquez-Chamorro, M. Resinas, A. Ruiz-Cortés, M. Toro. *Run-time prediction of business process indicators using evolutionary decision rules*. Expert Systems with Applications. 87:1-14. 2017. **Special relevance publication award US 2021.**

9. A.E. Márquez-Chamorro, M. Resinas, A. Ruiz-Cortés. 2018. *Predictive Monitoring of Business Processes: A Survey*. IEEE Trans. on Services Computing. 11(6): 962-977.
10. D. Benavides, S. Segura, A. Ruiz Cortés. 2010. *Automated Analysis of Feature Models 20 Years Later: A Literature Review*. Information Systems, 35(6): 615-636. **+1.7K citations in Google**

C.2. Congress, indicating the modality of their participation (invited conference, oral presentation, poster). If not specified, the format is oral.

1. [Invited Conference] Antonio Ruiz-Cortés. “Deconstructing API Consumption in Digital Ecosystems with Analog Technology”. 17th International Conference of Management of Digital Systems (MEDES). 2025. <https://conferences.sigappfr.org/medes2025/keynote-speakers/>
2. Juan C. Alonso, Alberto Martin-Lopez, Sergio Segura, Gabriele Bavota, Antonio Ruiz-Cortés. *SATORI: Static Test Oracle Generation for REST APIs*. IEEE/ACM International Conference on Automated Software Engineering (ASE 2025). Seoul, South Korea. 2025. [ICORE A*]
3. A. García-Fernández, J.A. Parejo, P. Trinidad, A. Ruiz-Cortés. *Automated Analysis of Pricings in SaaS-Based Information Systems*. CAiSE 2025:223-239.
4. A. García-Fernández, J. A. Parejo, F.J. Cavero and A. Ruiz-Cortés, *Racing the Market: An Industry Support Analysis for Pricing-Driven DevOps in SaaS*. ICSOC 2024. **Distinguished Paper Award**
5. A. Martin-Lopez, S. Segura, A. Ruiz-Cortés: *Online testing of RESTful APIs: promises and challenges*. ESEC/SIGSOFT FSE 2022: 408-420 . **Distinguished Paper Award**
6. A. E. Márquez-Chamorro, Isabel A. Nepomuceno-Chamorro, Manuel Resinas, Antonio Ruiz-Cortés: *Updating Prediction Models for Predictive Process Monitoring*. CAiSE 2022: 304-318
7. A. del-Río-Ortega, J. Peña, M. Resinas, A. Ruiz-Cortés. *Productivity Challenges in Digital Transformation and its Implications for Workstream Collaboration Tools*. HICSS 2021: 1-10.
8. A. Martin-Lopez, S. Segura, Antonio Ruiz-Cortés. *RESTest: Black-Box Constraint-Based Testing of RESTful Web APIs*. ICSOC 2020: 459-475.
9. B. Estrada-Torres, A. del-Río-Ortega, M. Resinas, A. Ruiz Cortés. *On the Relationships Between Decision Management and Performance Measurement*. CAiSE 2018: 311-326.
10. D. Benavides, A. Ruiz-Cortés, P. Trinidad. *Automated Reasoning on Feature Models*. CaiSE 2005: 491-503. **+970 citations in Google**.

C.3. Research projects, indicating your personal contribution. Some of which I have been PI.

1. ATHENA-TALOS. Técnicas y metodologías para la gobernanza de servicios híbridos (PID2024-155693NB-C44). 181M €. PI: José A. Parejo and **ARC**.
2. IRIS. Digital Transformation of the Public Administration driven by Intelligent Contracts. *Ministerio Ciencia e Innovación (MCI)*. TED2021-131023B-C2. 219.075 €. PI: S. Segura and **ARC**
3. PERSEO: Mejorando la operación y mejora continua de procesos en servicios digitales por medio de la colaboración bot-humano. PID2021-126227NB-C21. PI: M. Resinas and **ARC**.
4. Infraestructuras comunes de computación de altas prestaciones para el I3US. *MCI*. EQC2019-006325-P. 358.883 €. 01/01/20-31/12/21. PI: **ARC**
5. HAMLET. Tecnologías para mejorar la fiabilidad, personalización y costes de operación de aplicaciones basadas en servicios software y servicios basados en conocimiento. *MCI*. RTI2018-101204-B-C21. 01/01/19-31/12/21. 141.000 €. PI: S. Segura and **ARC**.
6. APOLO. Technologies for highly reliable service-oriented systems regulated by user contracts. *Junta de Andalucía (FEDER)*. US-1264651. 01/01/19-31/12/21. 90.000 €. PI: S. Segura and **ARC**.
7. ANA: Automatización del gobierno confiable de infraestructuras reguladas por Acuerdos de nivel de servicio. *Andalucía Tech*. 01/03/2020 - 31/09/2021. 75.046 €. PI: P. Fernández and **ARC**.
8. BELI. *Tecnologías para Servicios Cloud Híbridos, Altamente Configurables y Regulados por ANS*. Ministerio de Economía y Competitividad. TIN2015-70560-R. 01/01/16-31/12/18. 123.178 €. PI: Manuel Resinas and **ARC**.
9. RISE_BPM. Propelling Business Process Management by Research and Innovation Staff Exchange. H2020 (Marie Skłodowska-Curie Research and Innovation Staff Exchange). 01/05/14 – 01/05/18. 855.000€ (94.500€ for University of Seville). PI: Manuel Resinas and **ARC**.
10. SOA4ALL: Service-Oriented Architectures for All. EU Framework Programme (FP7) (Ref: FP7-215219). Atos Origin Sociedad Anónima Española (Spain) (coordinator). PI: **ARC** (responsible in the name of University of Seville).

C.4. Contracts, technological or transfer merits, Include patents and other industrial or intellectual property activities (contracts, licenses, agreements, etc.) in which you have collaborated. Indicate: a) the order of signature of authors; b) reference; c) title; d) priority countries; e) date; f) Entity and companies that exploit the patent or similar information, if any.

Contracts: (some of which I have been PI).

1. GALIBO: *Soporte en la elaboración de la propuesta Técnica para el Contrato de Servicios para la Integración y Normalización de los Sistemas de Información de la Consejería de Hacienda y Administración Pública*. 30/10/2019 – 31/12/2021. Everis. 30.000 €. PIs: P. Fernández and ARC.
2. REDIAM: *Estudio Previo de Requerimientos Tecnológicos y Funcionales de un Prototipo para el Almacenamiento y Procesamiento de Grandes Conjuntos de Datos para su Conversión en Soluciones para la Gestión Ambiental*. Consejería de Medio Ambiente y Ordenación del Territorio de la Junta de Andalucía. 01/06/2018 -- 31/01/2019. 17.666€. PIs J.Ojeda and ARC.
3. BPCMS. Desarrollo e implantación de un sistema de gestión de la conformidad de procesos de negocio. ENDESA. 15/02/2012- 30/09/2013. 60.000 €. PI: ARC
4. FCLOUD. Marco de desarrollo para SaaS. SADIEL. 02/2011-09/2012. 62.550 €. PI: ARC
5. PLATINA-FAST. Extensión a la plataforma PLATINA para la intermediación dinámica avanzada de servicios horizontales y aplicaciones basados en criterios de calidad". SADESI. 01/05/2010-0/04/2011. 62.550 €. PI: ARC
6. FAST-ESB. Aprovisionamiento de servicios sensible a la calidad integrado en PLATINA. SADESI. 01/05/2010-30/04/2011. 62.550 €. PI: ARC
7. STORE: Sistema Inteligente de Almacenamiento Distribuido de Energía. ISOTROL. 01/03/08-28/02/11. 133.000 €. PI: ARC
8. ESMARTNET. Sistemas Embebidos y Optimización de Middleware para aplicaciones de Redes en Tiempo Real (P61-06/E15). Agencia de Innovación y Desarrollo de Andalucía (IDEA). Isotrol S.A, AICIA y FIDETIA. 01/09/07-19/12/08. 120.960 €. PI: ARC

Patents and Registered tools (authors in alphabetical order)

International patent requested in collaboration with the company UNIDASH, based in California, on automatic analysis of conformity in business processes. System and Method for compliance event and incident management (CEIM). P. Fernández, M. Resinas, A. Ruiz Cortés, A. Sood Joshi. Application No.: 13602291. March 2012. <http://www.google.com/patents/US20140067448>.

Intellectual property on 20 prototypes that have been the core of his participation in the different R&D contracts. The cost of licensing and adaptation of these tools by 5 companies in 11 R&D contracts amounts to more than 300K euros. There is also evidence of many end-users using these tools. All these tools either have been presented at international conferences or are supported by a publication. As for the FAMA tool, it has already received more than 250 citations. He has promoted two Spin-Off: Personal e-commerce and ISALABS from these registered tools. Among the users of these tools we can find the ICT support services of the Andalusian Health Service and the Regional Ministry of Economy and Finance of the Regional Government of Andalusia. Selection:

1. Alberto Martín-Lopez, Sergio Segura, Antonio Ruiz-Cortés. RESTest. Territorial Registry of Intellectual Property of Andalusia (Registration number: 202299907830510). Universidad de Sevilla. Date: 06/07/2022. +200 stars in GitHub. <https://github.com/isa-group/RESTest>.
2. A. del Río-Ortega, C. Cabanillas, M. Resinas, A. Ruiz-Cortés. PPINOT. 27/01/2012. (SE-738-10). Used in 2 R&D contracts.. It has also been used in to compute process performance indicators in SLas by the Andalusian Health Service and by the Consejería de Hacienda y Administraciones Públicas. It is being used for teaching at the Univ. of Tilburg (Holanda) and UNIST (Corea del Sur).
3. C. Cabanillas, A. del Río-Ortega, M. Resinas, A. Ruiz-Cortés. CRISTAL (Tool for the analysis and management of human resources in busines processes). 27/01/2012 (SE-738-11). It has been the core of the solution delivered to the department of IT compliance at ENEL ENERGY EUROPE (before ENDESA) in the Project BPCMS. It has also been used in a technology transfer project performed by the WU Wien with Siemens.
4. Antonio Ruiz-Cortés, David Benavides, Pablo Trinidad, and Sergio Segura. SPL Reasoner. FAMA Tool Suite. Territorial Registry of Intellectual Property of Andalusia (Registration number: 01314). Universidad de Sevilla. Date: 21/12/2007. Countries in exploitation: 8. Entities that exploited it: +20. <https://github.com/diverso-lab/FaMA>. Discontinued.