

Part A. PERSONAL INFORMATION

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|--------------------------------------|---------------|----------------|------------|--|
| | | CV date | 2021-09-10 | |
| First and Family name | Luis Llana | | | |
| Social Security, Passport, ID number | 50828860x | Age | 52 | |
| Researcher numbers | Researcher ID | | | |
| | Orcid code | | | |

A.1. Current position

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|--------------------------------|--|--------|--|--|
| Name of University/Institution | Universidad Complutense de Madrid | | | |
| Department | Sistemas Informáticos y Computación | | | |
| Address and Country | C/ Prof. José García Santesmases 9, 28040, Madrid. Spain | | | |
| Phone number | +34913947552 | E-mail | llana@ucm.es | |
| Current position | Associate Professor | From | 1997-11-11 | |
| Espec. cód. UNESCO | 120317 | | | |
| Palabras clave | Formal methods, process algebra, testing semantics | | | |

A.2. Education

| PhD | University | Year |
|-------------|-----------------------------------|------|
| Mathematics | Universidad Complutense de Madrid | 1996 |
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A.3. JCR articles, h Index, thesis supervised

I have 4 consecutive 'sexenios' (six-year period of positive research evaluation). The last evaluated period has been 2007-2012. I have supervised 3 Ph.D. theses.

I have published 11 papers published in Thomson-JCR indexed journals, 4 of them are in the Q1 percentile, 2 in Q2 percentile, 2 in Q3 percentile, and 3 in Q3 percentile.

The following bibliometric data are taken from scholar google. I have 252 citations. My h-index is equal to 8. My i-10 index is equal to 6.

Part B. CV SUMMARY (max. 3500 characters, including spaces)

My research career began in 1992 when I joined the then Department of Computing and Automation at the Complutense University. In 1996, I presented my PhD thesis. Its subject was about formal semantics of computer languages, which since then has been my main line of research.

I have 3 consecutive six-year research terms. The last one that has been granted is 2007-2012. I have published almost 34 research papers in journals and congresses with an anonymous peer review process.

Throughout my research career, I have participated in research projects funded by competitive public calls. I have also been responsible for 3 research contracts under Article 83 of the L.O.U. I am currently the co-director of a UCM project.

I have supervised 3 PhD theses. All of them have a similar formal basis: the definition of a formal semantics for a specific language.

I have been teaching at the university for more than 25 years at all levels. In addition, I have usually participated in educational innovation projects. I have also published a book of a teaching nature. I have 4 consecutive five-year periods of teaching positive evaluations, the last period has been 2012-2016.

Part C. RELEVANT MERITS

C.1. Publications (including books)

Papers in JCR indexed journals

Pablo C. Cañizares, Alberto Núñez, Juan de Lara, Luis Llana: MT-EA4Cloud: A Methodology For testing and optimising energy-aware cloud systems. *J. Syst. Softw.* 163: 110522 (2020). Q1

Jose Luis Brita-Paja, Carlos Gregorio-Rodríguez, Luis Llana, Cristóbal Pareja, Adrián Riesco: Introducing MOOC-like methodologies in a face-to-face undergraduate course: a detailed case study. *Interactive Learning Environments* 27(1): 15-32 (2019). Q1

Carlos Camacho, Luis Llana, Alberto Núñez, Mario Bravetti: Probabilistic software product lines. *J. Log. Algebr. Meth. Program.* 107: 54-78 (2019). Q2

J. L. Brita-Paja, C. Gregorio, L. Llana, C. Pareja & A. Riesco Introducing MOOC-like methodologies in a face-to-face undergraduate course: a detailed case study, *Interactive Learning Environments* (2019), DOI: 10.1080/10494820.2018.1451345. Q1

Carlos Gregorio-Rodríguez, Luis Llana, Rafael Martínez, An axiomatic semantics for iocos_ conformance relation, *Journal of Logical and Algebraic Methods in Programming.* 100: 152-184. (2018). Q2

María-Emilia Cambronero, Luis Llana, Gordon J. Pace: A Calculus Supporting Contract Reasoning and Monitoring. *IEEE Access* 5: 6735-6745 (2017). Q1

Carlos Camacho, Luis Llana, Alberto Núñez: Cost-related interface for software product lines. *J. Log. Algebr. Meth. Program.* 85(1): 227-244. Q2 (2016).

Luis Llana, Enrique Martin-Martin, Cristóbal Pareja-Flores, J. Ángel Velázquez-Iturbide: FLOP: A User-Friendly System for Automated Program Assessment. *J. UCS* 20(9): 1304-1326 (2014). Q4

Ismael Rodríguez, Luis Llana, Pablo Rabanal: A General Testability Theory: Classes, Properties, Complexity, and Testing Reductions. *IEEE Trans. Software Eng.* 40(9): 862-894 (2014). Q1

César Andrés, Carlos Camacho, Luis Llana: A formal framework for software product lines. *Information & Software Technology* 55(11): 1925-1947 (2013). Q1

Luis Fernando Llana Díaz, Manuel Núñez: Testing Semantics for RTPA. *Fundam. Inform.* 90(3): 305-335 (2009). Q3

César Andrés, Luis Fernando Llana Díaz, Ismael Rodríguez: Formally transforming user-model testing problems into implementer-model testing problems and viceversa. *J. Log. Algebr. Program.* 78(6): 425-453 (2009). Q3

Alberto de la Encina, Luis Llana, Fernando Rubio: A Debugging System Based on Natural Semantics. *J. UCS* 15(14): 2836-2880 (2009). Q4

Articles in relevant conferences

Carlos Gregorio-Rodríguez, Luis Llana, Rafael Martínez-Torres:
Extending mCRL2 with ready simulation and iocos input-output conformance simulation. SAC 2015: 1781-1788.

Carlos Gregorio-Rodríguez, Luis Llana, Rafael Martínez-Torres:
Effectiveness for Input Output Conformance Simulation iocos. FORTE 2014: 100-116

Carlos Gregorio-Rodríguez, Luis Llana, Rafael Martínez-Torres:
Input-Output Conformance Simulation (iocos) for Model Based Testing. FMOODS/FORTE 2013: 114-129

F. Javier Crespo, Alberto de la Encina, Luis Llana:
Fuzzy-Timed Automata. FMOODS/FORTE 2010: 140-154

Rafael García, Luis Llana, Constantino Malagón, Jesús Pancorbo:
Event Prediction in Network Monitoring Systems: Performing Sequential Pattern Mining in Osmius Monitoring Tool. ICDM 2010: 632-642

Manuel Núñez, Luis Fernando Llana Díaz:
A Hierarchy of Equivalences for Probabilistic Processes. FORTE 2008: 267-282

Alberto de la Encina, Luis Llana, Fernando Rubio, Mercedes Hidalgo-Herrero:
Observing intermediate structures in a parallel lazy functional language. PPDP 2007: 109-120

Luis Fernando Llana Díaz, Manuel Núñez:
Testing Semantics for Unbounded Nondeterminism. Euro-Par 1997: 538-545

David de Frutos-Escrig, Luis Fernando Llana Díaz, Manuel Núñez:
Friendly Testing as a Conformance Relation. FORTE 1997: 283-298

Manuel Núñez, David de Frutos-Escrig, Luis Fernando Llana Díaz:
Acceptance Trees for Probabilistic Processes. CONCUR 1995: 249-263

Books

Luis Llana, Carlos Gregorio, Raquel Martínez, Pedro Palao y C. Pareja, "Ejercicios creativos y recreativos en C++", Ed. Prentice-Hall, 2002. ISBN 84-205-3211-8.

C.2. Research projects and grants

• **FAME:** Modelado formal y métodos avanzados de testing. Aplicaciones a medicina y sistemas computacionales (RTI2018-093608-B-C31). Ministerio de Ciencia, Innovación y Universidades. Plan Nacional I+D+i.

Funds: 95.106€.

January 2019 - December 2021.

Research group member.

↗ **DARDOS:** Desarrollo y Análisis formal de sistemas complejos en contextos DistribuidOS: fundamentos, herramientas y aplicaciones. Ministerio de Economía y Competitividad.

Dirección General de Investigación Científica y Técnica (ref. **TIN2015-65845-C3-1-R**). Funds: 100.430€.

January 2016 - December 2018.

Research group member.

↗ **SICOMORO-CM:** Desarrollo de Sistemas CONfiables mediante MOdelos y heRRamientas avanzadas (**S2013/ICE-3006**). Comunidad de Madrid. Convocatoria *Tecnologías 2013*.

Funds: 635.088,65 €

October 2014 - September 2018.

Research group member.

- ⌘ **ESTuDIO:** ESpecificación y Testing de sistemas altamente DistribuIdOs (**TIN2012-36812-C02-01**). *Ministerio de Economía y Competitividad. Plan Nacional I+D+i.*
Funds: 42.108€.
January 2013 - December 2015.
Research group member.
- ⌘ **TESIS:** advanced methodologies and tools for TESTing and web Services (**TIN2009-14312-C02-01**). *Ministerio de Ciencia e Innovación. Plan Nacional I+D+i.*
Funds: 279.510,01€.
JanuarSonia Estévez Martín, María-Emilia Cambronero, Yolanda García-Ruiz, Luis Llana:y
2010 - June 2014.
Research group member.
- ⌘ **WEST:** WEb Services y Testing: fundamentos y aplicaciones (**TIN2006-15578-C02-01**). *Ministerio de Educación y Ciencia. Plan Nacional de I+D+i.*
Funds: 197.109€.
October 2006 - June 2010.
Research group member.

C.3. Contracts

- ⌘ Diseño y verificación de workflows de documentos. *Mediform Plus.*
Funds: 5800€.
June 2010 - December 2010
Leader of the project.
- ⌘ Verificación de requisitos de sistemas mediante máquinas de estados finitas utilizando un software de monitorización. *Peopleware S.L.*
Funds: 8120€.
December 2008 - October 2009.
Leader of the project (together Prof. Manuel Núñez).
- ⌘ Predicciones secuenciales y temporales de alarmas en las monitorizaciones de sistemas. *Peopleware S.L.*
Funds: 15080€. Sonia Estévez Martín, María-Emilia Cambronero, Yolanda García-Ruiz, Luis Llana:
Mobile Applications for People with Parkinson's Disease: A Systematic Search in App Stores and Content Review. *J. UCS 25(7): 740-763 (2019). Q4*

Carlos Camacho, Luis Llana, Alberto Núñez, Mario Bravetti:
Probabilistic software product lines. *J. Log. Algebr. Meth. Program. 107: 54-78 (2019). Q2*
October 2008 - July 2009.
Leader of the project (together Prof. Manuel Núñez).

C.3 Thesis supervised

- ⌘ Carlos Camacho: Métodos formales para la representación de líneas de productos software: junio 2016.
- ⌘ Rafael Martínez Torres: Semánticas de simulación para relaciones de conformidad. septiembre 2015
- ⌘ Alberto de la Encina Vara: Formalizando el proceso de depuración en programación funcional paralela y perezosa. 2008.

C.4 Institutional responsibilities

Secretary of 'Sistemas Informáticos y Computación' department at Universidad Complutense de Madrid. Mach 2002 – April 2004.

Vicehead of 'Sistemas Informáticos y Computación' department. October 2010 – September 2012, October 2013 – September 2014.

C.5 Memberships of scientific societies

Secretary of the 'Sociedad de Computación Concurrente y Distribuida'. June 2012 – June 2014