

CURRICULUM VITAE (maximum 4 pages)

Part A. PERSONAL INFORMATION

CV date

5/02/2024

First and Family name	Carlos GREGORIO RODRÍGUEZ		
Social Security, Passport, ID number	52182754d	Age	53
Researcher numbers	Researcher ID		
	Orcid code		0000-0001-7612-899X

A.1. Current position

Name of University/Institution	Universidad Complutense de Madrid		
Department	Sistemas Informáticos y Computación		
Address and Country	Ciudad Universitaria 28040		
Phone number	91 3944527	E-mail	cgr@sip.ucm.es
Current position	Associate Profesor(Profesor Titular)	From	25/09/2009
Espec. cód. UNESCO			
Palabras clave	Formal Methods, Parallel Computing, Big Data, Applied Data Science		

A.2. Education

PhD	University	Year
Mathematics	Universidad Complutense de Madrid	2009

A.3. Research

Four consecutive "sexenios de investigación", that is: four 6-year periods of positive evaluations of the research activity by the National Research Agency. The last evaluated research period was 2014-2019.

Papers published in indexed journals in *Thomson-JCR*:

Cell Systems

Journal of Local and Algebraic Methods in Programming,

Interactive Learning Environments,

Logical Methods in Computer Science,

Information and Computation,

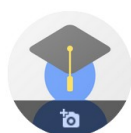
Theoretical Computer Science,

Information Processing Letters,

etc.

And papers published in conferences ranging in class 1 (excellent), class 2 (very good events) and class 3 (events of good quality) in the GII-GRIN-SCIE (GGS) Conference Rating

The following bibliometric data are taken from *scholar*:



Carlos GREGORIO-RODRÍGUEZ

Profesor Titular, Universidad Complutense de Madrid

Dirección de correo verificada de sip.ucm.es - [Página principal](#)

[Theoretical Computer Science](#) [Formal Methods](#) [Semantics of Concurrency](#)



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Remarkable deep and thorough works with a large number of pages. An average of over 20 pages per published paper.

Finally, another clear quality measure are the appearances in the Mathematical Review (MR2498705, MR3078096, MR3216000, MR2797270, MR2757388, MR2559846, MR2888136, MR3629578).

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

Associate Profesor. Coordinator of the doctoral programa on Applied Data Science. Member of the Self Steering Committee of Data Science & Artificial Intelligence of the Una Europa alliance of universities.

Graduate in Mathematics in Universidad Complutense de Madrid. I complement my postgrade education in some of the best research institution in theoretical computer science in Europe:

- Basic Research Institute in Computer Science (BRICS), Dinamarca;
- Institute for Programming Research and Algorithms (IPA), Holanda;
- Turku Center for Computer Science (TUCS), Finlandia;
- Technische Universität München (TUM), Alemania;
- International Center for Mechanical Sciences (CISM), Italia.

I got my Ph. D. in 2009 in Universidad Complutense de Madrid and then in 2009 I get an Associate Professor position in the Departamento de Sistemas Informáticos y Computación.

One of my lines of research is the study of formal methods for develop, testing and validation of complex concurrent, distributed, cloud and parallel systems. I've thoroughly studied the semantics of nondeterministic processes finding patterns and general results that allow to precisely select the semantics to use for a concrete application.

In 2010 I got an EAA-ABEL Extraordinary Chair as a visiting researcher to work with Professor Luca Aceto in the Reykjavik University. The research colaboration was extended in 2015 with competitive financial support from NILS Science and Sustainability Program.

A passionate advocate for interdisciplinary collaboration, recognizing the potential for cross-pollination of ideas between traditionally distinct fields, with a profound interest in the applications of data science to bio and health sciences. In 2010 I signed a "Material Transfer Agreement" with the Babraham Institute of Cambridge, to formally study the dynamics, behaviours and patters in wasp nests. From 2017 to 2020, I've conducted a multidisciplinary team (computer scientists, mathematicians and ophthalmologists) to apply formal methods and computer vision techniques to the study of eye diseases.

Interested in extending research beyond conventional boundaries, seeking solutions that contribute to both scientific advancements and the greater good of society. Ongoing collaboration with Kyndryl on a social responsibility project to produce data-driven decision tools to assist in making informed decisions on sustainability issues.

Part C. RELEVANT MERITS

C.1. Publications (including books)

Journal. Self-organization of plasticity and specialization in a primitively social insect. Cell Systems, Vol. 13, No. 9, pp. 768-779.e4.

Journal. Logical characterizations, rule formats, and compositionality for input-output conformance simulation. Journal of Logical and Algebraic Methods in Programming, Vol. 106, pp. 78-106.

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

Journal. J. L. Brita-Paja and C. Gregorio and L. Llana and C. Pareja and A. Riesco. 2018. Introducing MOOC-like methodologies in a face-to-face undergraduate course: a detailed case study. Interactive Learning Environments. Pending paper publication. 1-18.

Conference. Luca Aceto et al. (/1). 2017

Logical Characterisations and Compositionality of Input-Output Conformance Simulation. 43rd International Conference on Current Trends in Theory and Practice of Computer Science. SOFSEM: 37-48.

Conference. CARLOS GREGORIO RODRIGUEZ; LUIS FERNANDO LLANA DIAZ; RAFAEL MARTINEZ TORRES. (/1). 2015. Extending mCRL2 with ready simulation and iocos input-output conformance simulation. Association for Computing Machinery. ISBN 978-1-4503-3196-8.

Journal. LUCA ACETO; et al. (/1). 2014. Axiomatizing weak simulation semantics over BCCSP. Theoretical Computer Science. pp.42-71. ISSN 0304-3975.

Conference. CARLOS GREGORIO RODRIGUEZ; LUIS FERNANDO LLANA DIAZ; RAFAEL MARTINEZ TORRES. (/1). 2014. Effectiveness for Input Output Conformance Simulation iocos. Lecture Notes in Computer Science. pp.100-116. ISSN 0302-9743.

Journal. DAVID DE FRUTOS ESCRIG; et al. (/1). 2013. Unifying the linear time-branching time spectrum of strong process semantics. Logical Methods in Computer Science. 9, pp.1-71. ISSN 1860-5974.

Conference. CARLOS GREGORIO RODRIGUEZ; LUIS FERNANDO LLANA DIAZ; RAFAEL MARTINEZ TORRES. (/1). 2013. Input-Output Conformance Simulation (iocos) for Model Based Testing. Lecture Notes in Computer Science. 7892, pp.114-129. ISSN 0302-9743.

Conference. LUCA ACETO; et al. (/1). 2012. The Equational Theory of Weak Complete Simulation Semantics over BCCSP. Lecture Notes in Computer Science. 7147, pp.141-152. ISSN 0302-9743.

Conference. LUCA ACETO; et al. (/1). 2011. Axiomatizing Weak Ready Simulation Semantics over BCCSP. Lecture Notes in Computer Science. 6916, pp.7-24. ISSN 0302-9743.

Journal. LUCA ACETO; et al. (/1). 2011. Complete and ready simulation semantics are not finitely based over BCCSP, even with a singleton alphabet. Information Processing Letters. 9, pp.408-413. ISSN 0020-0190.

Journal. DAVID DE FRUTOS ESCRIG; CARLOS GREGORIO RODRIGUEZ; MIGUEL PALOMINO TARJUELO. (/1). 2009. On the unification of process semantics: equational semantics. Electronic Notes in Theoretical Computer Science. pp.243-267. ISSN: 1571-0661.

Journal. DAVID DE FRUTOS ESCRIG; CARLOS GREGORIO RODRIGUEZ; MIGUEL PALOMINO TARJUELO. (/2). 2009. Ready to preorder: an algebraic and general proof. Journal of Logic and Algebraic Programming. 78, pp.539-551. ISSN 1567-8326.

Journal. DAVID DE FRUTOS ESCRIG; CARLOS GREGORIO RODRIGUEZ. (/1). 2009. (Bi)simulations up-to characterise process semantics. Information and Computation. 207, pp.146-170. ISSN 0890-5401.
11 Artículo científico. DAVID DE FRUTOS ESCRIG; CARLOS GREGORIO RODRIGUEZ; MIGUEL PALOMINO TARJUELO. (/2). 2009. On the unification of process semantics: observational semantics. Lecture Notes in Computer Science. 5404, pp.279-290. ISSN 0302-9743.

C.2. Research projects and grants (last 10 years)

FORMal models and Technologies for Emerging applications Madrid Science University and Innovation **S2018/TCS-4314** 2019-2022

MODELADO FORMAL Y MÉTODOS AVANZADOS DE TESTING. APLICACIONES A MEDICINA Y SISTEMAS COMPUTACIONALES. National Research Agency. **RTI2018-093608-B-C31.** 2017-2020

UCM Multidisciplinary Research Project. PR26/16-9B-1. Computer Vision and 3D techniques applied to the study of the optic nerve diseases. Santander-UCM. 10.000€. December 2016/ December 2018.

DARdos: Desarrollo y Análisis formal de sistemas complejos en contextos DistribuidOS: fundamentos, herramientas y aplicaciones (**TIN2015-65845-C3-1-R (MINECO/FEDER)**). Ministerio de Economía y Competitividad 100.430 €. January/2016 – December/2018. Universidad Complutense de Madrid, Universidad de Cádiz y Universidad de Castilla-La Mancha.

SICOMORo-CM: Desarrollo de Sistemas Confiables mediante Modelos y herramientas avanzadas (**S2013/ICE-3006**). Comunidad de Madrid. Convocatoria Tecnologías 2013. 635.088,65 € October/2014 - September/2018.

NILS Science and Sustainability Program: Formal Methods for the development and evaluation of sustainable systems (**ABEL-CM-01-2013**). European Economic Area (EAA) ES027-EAA Grants. 100.050€. April/2014 – November/2015

ESTudio: ESpecificación y Testing de sistemas altamente DistribuidOs (**TIN2012-36812-C02-01**). Ministerio de Economía y Competitividad. Plan Nacional I+D+i. Cuantía (Grupo UCM, IP M. Núñez): 42.108€. January/2013 - December/2015.

TESIS: advanced methodologies and tools for TESTING and web Services (**TIN2009-14312-C02-01**). Ministerio de Ciencia e Innovación. Plan Nacional I+D+i. (Grupo UCM, IP M. Núñez): 279.510,01€. January/2010 - June/2014.

WEST: WEb Services y Testing: fundamentos y aplicaciones (**TIN2006-15578-C02-01**). Ministerio de Educación y Ciencia. Plan Nacional de I+D+i. (Grupo UCM, IP M. Núñez): 197.109€. October/2006 – June/2010.

C.3. Contracts

2013. Responsible for the Material Transfer Agreement between Universidad Complutense de Madrid and the Epigenetic department of Professor y Wolf Reik of the Babraham Institute of Cambridge. To study the behaviour in environmental stress of *Polistes Canadensis* and its relation with epigenetic changes.

2020. Contract with PERAMA INGENIERÍA S.L. y la UNIVERSIDAD COMPLUTENSE DE MADRID, for a consultancy on Montecarlo simulation techniques on Weibul and Kaplan-Maier estimators and D. Carlos Gregorio Rodríguez.

C.5, C.6, C.7... Others

Semántica de Simulación para Relaciones de Conformidad. Doctoral Thesis Supervisor of Rafael Martínez Torres. Sobresaliente cum laude. 2015.

Análisis de Campimetrías Visuales mediante Estadística Espacial. Antón Lorenzo García. Masterthesis. 2019.

Predicción del parámetro de evolución de pacientes utilizando algoritmos de Machine Learning en campimetrías. Ana Granados Bolaños. Masterthesis. 2019.

Faculty Board Member 2014-2018. Universidad Complutense de Madrid

Member of the Data Science Doctoral Program Commission (2015-). Universidad Complutense de Madrid

Founder member of the Asociación Española por el Avance de la Ciencia, AEAC.

Member of the European Association for Theoretical Computer Science.

Awarded in the Call UCM-EEA-ABEL-02-2009, for a study visit at the Reykjavik University, Iceland, from April 5 to July 4, 2010.

Visiting position within the framework of the project NILS 001-ABEL-CM-2013, from the 2nd of June to the 30th of July 2015.

Program Committee-Chair of the Workshop in Formal Methods in the Development of Software 2013, 2014.