PERSONAL INFORMATION

First and Family name	Manuel Prieto Matías		
Age	47		
Author identification		Researcher ID	K-8325-2012
		Orcid code	0000-0003-0687-3737

Current position

Institution	Universidad Complutense de Madrid		
Department	Arquitectura de Computadores y Automática / Computer Architecture and Automation https://www.ucm.es/dacya		
Address and Country	Facultad de Informática, C/ Prof. José García Santesmases, 9, 28040 Madrid (Spain)		
Phone number	+913944540	E-mail	mpmatias@ucm.es
Current position	Full Professor (Catedrático de Universidad)		
UNESCO Code	330406		
Keywords	Heterogeneous computing, Parallel Computing, Code generation and optimization, Multicore/Manycore Processors, Scheduling, Energy Efficiency, Non-Volatile Memories		

A. General indicators of the scientific production (Date: 24/2/2020)

Publications in Journals indexed in the Journal Citation Report (JCR): 49

- 11 publications in the 1st quartile (JCR Q1)
- 17 publications in the 2nd quartile (JCR Q2)

Gscholar Profile: https://scholar.google.es/citations?user=t9t6hOAAAAAJ

- Citations: 2515 (1199 since 2015).
- Average citations/year (2015-2019): 237
- h index: 25
- h-10 index: 72

Scopus Profile: https://www.scopus.com/authid/detail.uri?authorId=57192705150

- Citations: 1340 (776 since 2015).
- Average citations/year (2015-2019): 153
- h index: 20

Mendeley Profile: https://www.mendeley.com/profiles/manuel-prieto-matias/

- Citations: 1339
- h index: 20

Ph. D thesis supervised: 13 (6 of them in the last ten years)

Three six-years research terms (*sexenios*) passed with positive evaluation by the Spanish Research Evaluation Commission (CNEAI)

B. CV SUMMARY

Manuel Prieto Matias received the PhD degree from Complutense University of Madrid (UCM) in 2000 with a thesis on optimization of multigrid methods on distributed memory computers under the supervision of Prof. Francisco Tirado and Prof. Ignacio M. Llorente. Since 2002, he has been a Professor at the Department of Computer Architecture at UCM (Full Professor since June 2019).

His research interests include various aspects of high-performance computing, system software and code generation and optimization, such as complexity-effective processor micro-architecture, hybrid memory organizations and process and task scheduling. His current emphasis is on effective management of memory and computing resources on heterogeneous platforms.

Manuel has co-authored over 100 scientific publications and has co-advised 13 Ph. D thesis. His most important contributions over the last 10 years are related to:

- **Resource management on multicore processors**. Some of his most-cited papers are focused on the design and implementation of asymmetric-aware OS schedulers based on combining hardware performance counter monitoring and robust predictive models.

- **Code generation and optimization.** Application mapping and code generation on parallel computers and accelerators is one of his recurrent research topics. Some of his most relevant contributions to this field are related to the extraction and exploitation of SIMD parallelism from different numerical and multimedia kernels.

As a member of the ArTeCS group, Manuel has participated in 10 competitive projects, being the PI in 3 of them funded by the Spanish Government. He has also participated in multiple technology transfer contracts with companies and institutions (IMEC, Imagination Technologies, Texas Instruments, INDRA, Satlink, Avalon Biometrics, Inclan), being PI in 3 of them.

He served as Vice-Dean for International Relations and Research of the School of Computer Science (2010-2018), and as Director of the Office for Free Software of the UCM (2009-2010). He has also served as reviewer for the ANEP Spanish agency, being assistant to the Coordinator of the area of Computer Science and Information Technology (INF area) from January 2006 to August 2009.

C. RELEVANT MERITS

C.1. Selected Publications

1. Juan Carlos Saez, Manuel Prieto, Alexandra Fedorova, and Sergey Blagodurov. A comprehensive scheduler for asymmetric multicore systems. In Proceedings of the 5th European conference on Computer systems (EuroSys '10). ACM. 139-152. doi:10.1145/1755913.1755929, ISBN: 978-1-60558-577-2. Class 1 GGS Conference Ranking, 26.5% acceptance rate , 163 citations in G-Scholar.

2. Sergey Zhuravlev, Juan C. Saez, Sergey Blagodurov, Alexandra Fedorova, Manuel Prieto. Survey of Energy-Cognizant Scheduling Techniques, IEEE Trans on Parallel and Distributed Systems, 24, 7, Jul. 2013, 1447-1464. doi: 10.1109/TPDS.2012.20, JCR(Q1), 151 citations in G-Scholar.

3. Sergey Zhuravlev, Juan Carlos Saez, Sergey Blagodurov, Alexandra Fedorova, and Manuel Prieto. Survey of scheduling techniques for addressing shared resources in multicore processors. ACM Computing Surveys, 45, 1, Article 4, Dec. 2012, 28 pages. doi: 10.1145/2379776.2379780. JCR(Q1), 151 citations in G-Scholar.

4. Christian Tenllado, Javier Setoain, Manuel Prieto, Luis Piñuel, and Francisco Tirado. Parallel Implementation of the 2D Discrete Wavelet Transform on Graphics Processing Units: Filter Bank versus Lifting. IEEE Trans. Parallel Distrib. Syst. 19, 3, Mar. 2008, 299-310. doi:10.1109/TPDS.2007.70716. JCR(Q1), 140 citations in G-Scholar.

5. Javier Setoain, Manuel Prieto, Christian Tenllado, Antonio Plaza, Francisco Tirado, Parallel Morphological Endmember Extraction Using Commodity Graphics Hardware,

IEEE Geoscience and Remote Sensing Letters, 4, 3, Jul. 2007, 441-445. doi: 10.1109/LGRS.2007.897398. JCR(Q2), 98 citations in G-Scholar.

6. Alexandra Fedorova, Juan Carlos Saez, Daniel Shelepov, and Manuel Prieto. Maximizing power efficiency with asymmetric multicore systems. Communications of the ACM 52, 12, Dec 2009, 48-57. doi:10.1145/1610252.1610270. JCR(Q1), 88 citations in G-Scholar.

7. Javier Setoain, Manuel Prieto, Christian Tenllado, and Francisco Tirado. GPU for Parallel On-Board Hyperspectral Image Processing. International Journal High Performance Computing Applications. 22, 4, Nov. 2008, 424-437. doi: 10.1177/1094342007088379. JCR(Q1), 68 citations in G-Scholar.

8. Juan Carlos Saez, Daniel Shelepov, Alexandra Fedorova, Manuel Prieto, Leveraging workload diversity through OS scheduling to maximize performance on single-ISA heterogeneous multicore systems, Journal of Parallel and Distributed Computing, 71, 1, Jan. 2011, 114-131. doi:10.1016/j.jpdc.2010.08.020. JCR(Q2), 55 citations in G-Scholar.

9. Ricardo J. Barrientos, José I Gómez, Christian Tenllado, Manuel Prieto Matias, Mauricio Marin, kNN query processing in metric spaces using GPUs. European Conference on Parallel Processing (Euro-Par 2011). Class 2 GGS Conference Ranking. Lecture Notes in Computer Science, vol 6852. Springer. 45 citations in G-Scholar.

10. Adrian Garcia-Garcia, Juan Carlos Saez, Manuel Prieto-Matias. Contention-Aware Fair Scheduling for Asymmetric Single-ISA Multicore Systems. IEEE Transactions on Computers. Doi:1109/TC.2018.2836418, JCR(Q1). 5 citations in G-Scholar.

C.2. Selected research projects and grants

1. Title: Heterogeneity and specialization In the post-Moore ERA / Heterogeneidad y especialización en la era post-Moore (cHIMERA)
   Funding entity: Spanish government - MINECO (RTI2018-093684-B-I00)
   Principal Investigator: Manuel Prieto Matías and Luis Piñuel Moreno
   Starting date: 1.01.2019 Ending date: 31.12.2021

2. Title: Efficient heterogeneous computing: from the processor to the datacenter / COmPutación HEteRogéNea efIciente: del procesadOr al datacenter (COPHERNICO)
   Funding entity: Spanish government - MINECO (TIN2015-65277-R)
   Principal Investigator: Manuel Prieto Matías and Luis Piñuel Moreno
   Starting date: 1.01.2016 Ending date: 31.12.2019

3. Title: Emerging architecture and technology. Energy efficiency via heterogeneity/ ARquitecturas y Tecnologías emergentes. Eficiencia energética mediante heterogeneidad (ARTE)
   Funding entity: Spanish government - MINECO (TIN2012-32180)
   Principal Investigator: Manuel Prieto Matías
   Starting date: 1.01.2013 Ending date: 30.06.2017

4. Title: Service architecture for supercomputing in the cloud (AMBÚ)
   Funding entity: Spanish government - Avanza I+D TSI-020100-2010- 962)
   Principal Investigator: Francisco Javier Diego Martín (Idea Informática – Grupo Gesfor)
   Starting date: 30.09.2010 Ending date: 30.09.2012
   Total Funding: 98.437€.

5. Title Hardware/Software architecture for high performance computing systems II
   Funding entity: Spanish government - MEC (TIN2008-00508)
   Principal Investigator: José F. Tirado Fernández (UCM)
   Starting date: 1.1.2009 Ending date: 30.06.2015

6. Title: Supercomputation and e-Science
   Funding entity: Spanish government MEC (CONSOLIDER INGENIO 2010-CSD2007-50)
   Principal Investigator: Mateo Valero Cortés (Barcelona Supercomuting Center)
   Starting date: 1.10.2007 Ending date: 30.06.2013

C.3. Selected Contracts

1. Title: Software controlled Hybrid Memory architecture exploitation
   Principal Investigator: José Ignacio Gómez Pérez (ArTeCS, UCM)
   Funding entity: INTERUNIVERSITAIR MICRO-ELECTRONICA CENTRUM (IMEC) vzw
   Starting date: 01.01.2019 Ending date: 31.12.2021
   Total Funding: 114.000 €

2. Title: Infrastructure for IoT memory organisation
   Principal Investigator: José Ignacio Gómez Pérez (ArTeCS, UCM)
   Funding entity: INTERUNIVERSITAIR MICRO-ELECTRONICA CENTRUM (IMEC) vzw
   Starting date: 01.01.2016 Ending date: 31.12.2018
   Total Funding: 69.035 €

3. Title: High Performance Dense Linear Algebra on Multicore DSPs
   Principal investigator: Francisco Igual Peña and Luis Piñuel Moreno (ArTeCS, UCM)
   Funding Entity: TEXAS INSTRUMENTS
   Starting date: 16.09.2013 Ending date: 16.09.2015
   Total Funding: 40.000 USD

4. Title: System level management of hybrid memory systems
   Principal Investigator: Christian Tenllado van der Reijden (ArTeCS, UCM)
   Funding entity: INTERUNIVERSITAIR MICRO-ELECTROICA CENTRUM (IMEC) vzw
   Starting date: 24.01.2011 Ending date: 31.12.2015
   Total Funding: 54.084

5. Title: Optimization of a HW/SW Platform for the development of services for a satellite device using an imperative programming language
   Principal investigator: Luis Piñuel Moreno (ArTeCS, UCM)
   Funding: SATLINK S.L
   Starting date: 10.12.2014 Ending date: 10.10.2015
   Total Funding: 77.082 €

6. Title: 1-N face verification. Efficient implementation on multiprocessors on chip.
   Funding: Avalon Biometrics S.L.
   Principal investigator: Manuel Prieto Matias
   Starting date: 13.02.2009 Ending date: 12.02.2010
   Total Funding: 41.000 €

C.4. Other Merits

1. Vice-dean for International Relations and Research in the School of Computer Science UCM. From: June 2010 to June 2018.

2. Director of the Office for Free Software and Open Technologies of the Complutense University of Madrid (Adviser of the Vice-chancellor for New Technologies). From: October 2009 to June 2010.

3. Assistant to the Coordinator of the Area of Computer Science and Information Technology (INF Area) of the National Agency for Evaluation and Forecasting (ANEP). From January 2006 to August 2009.

4. Member of the HIPEAC Network of Excellence since 2009.