Miriam García Soto

Currículum Vitae

Vienna, Austria
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Education

2012 – 2017 **PhD in Software and Systems** - Grant from Spanish Ministry of Economy and Competitiveness
Automatization of stability analysis for hybrid systems
IMDEA Software Institute - Advisor: Pavithra Prabhakar (KSU) - Extraordinary PhD thesis award by UPM
Research stay at *Kansas State University - Computer Science*

2010 – 2012 **Master of Applied Mathematics** - Erasmus Mundus scholarship from EACEA, European Comission
Mathematical Modelling in Engineering: Theory, Numerics, Applications
Università degli Studi dell' Aquila and Universität Hamburg

2007 – 2008 **Postgraduate Degree**
Remote Sensing by Satellite
Universidad Politécnica de Madrid

2007 **Teaching Certificate**
Universidad Complutense de Madrid

2007 **Postgraduate Degree**
Surveying and Observation New Systems related to Meteorology and Climatology
Universitat de València

2004 – 2005 **ERASMUS European Exchange Program** - Scholarship from Spanish Ministry of Education
Universiteit van Amsterdam & Vrije Universiteit Amsterdam

1997 – 2004 **Licentiate Degree**
Mathematics
Universidad Complutense de Madrid

Work Experience

2018 – present
Postdoctoral researcher at Institute of Science and Technology Austria
Inference of Hybrid Systems - Advisor: Thomas A. Henzinger

2012
Assistant researcher at http://bio.phys.uniroma1.it/
Computational Biochemistry

2008 – 2010
Assistant researcher at GPDS-Ceditec (UPM)
Air Traffic Management

2007 – 2008
Systems Junior Engineer at Indra
Insurance Business Systems

2006 – 2007
Mathematician at ACNielsen
Marketing Research

2006
PL/SQL Programmer at MAPFRE
Business Informatics

2005 – 2006
Programmer at SIPSA S.A.
Software Creation

Publications

[14] **Abstraction based verification of stability of polyhedral switched systems** NAHS 2020
Miriam García Soto, and Pavithra Prabhakar.
Nonlinear Analysis: Hybrid Systems, IFAC journal.

[13] **Formal Synthesis of Stabilizing Controllers for Periodically Controlled Linear Switched Systems** ICC 2019
Atreyee Kundu, Miriam García Soto, and Pavithra Prabhakar.
Indian Control Conference Proceedings, IEEE.

[12] **Membership-Based Synthesis of Linear Hybrid Automata** CAV 2019
Miriam García Soto, Thomas A. Henzinger, Christian Schilling, and Luka Zeleznik. *
International Conference on Computer-Aided Verification.

[11] **Averist: Algorithmic Verifier for Stability of Linear Hybrid Systems** HSCC 2018
Miriam García Soto and Pavithra Prabhakar.
International Conference on Hybrid Systems: Computation and Control.

[10] **Formal Synthesis of Stabilizing Controllers for Switched Systems** HSCC 2017
Pavithra Prabhakar and Miriam García Soto.*
International Conference on Hybrid Systems: Computation and Control.

[9] **Counterexample Guided Abstraction Refinement for Stability Analysis** CAV 2016
Pavithra Prabhakar and Miriam García Soto.*
International Conference on Computer-Aided Verification.

[8] **An algorithmic approach to global asymptotic stability verification of hybrid systems** EMSOFT 2016
Pavithra Prabhakar and Miriam García Soto.*
International Conference on Embedded Software.

[7] **Hybridization for Stability Analysis of Switched Linear Systems** HSCC 2016
Pavithra Prabhakar and Miriam García Soto.*
International Conference on Hybrid Systems: Computation and Control.

[6] **Verification Techniques for Hybrid Systems** ISOLA 2016
Pavithra Prabhakar, Miriam García Soto and Ratan Lan.
International Symposium on Leveraging Applications of Formal Methods, Verification and Validation

[5] **AVERIST: An Algorithmic Verifier for Stability** NSV 2015
Pavithra Prabhakar and Miriam García Soto.*
International Workshop on Numerical Software Verification.

[4] **An Algorithmic Approach to Stability Verification of Hybrid Systems: A Summary** SNR 2015
Pavithra Prabhakar and Miriam García Soto.*
International Workshop on Symbolic and Numerical Methods for Reachability Analysis.

[3] **Foundations of Quantitative Predicate Abstraction for Stability Analysis of Hybrid Systems** VMCAI 2015
Pavithra Prabhakar and Miriam García Soto.*
International Conference on Verification, Model Checking, and Abstract Interpretation.

[2] **An algorithmic approach to stability verification of polyhedral switched systems** ACC 2014
Pavithra Prabhakar and Miriam García Soto.*
Americal Control Conference.

[1] **Abstraction based Model-Checking of Stability of Hybrid Systems** CAV 2013
Pavithra Prabhakar and Miriam García Soto.*
International Conference on Computer-Aided Verification.

∗ : alphabetical order

Conferences attended

CAV 2018	**30th International Conference on Computer Aided Verification**
HSCC 2018	**International Conference on Hybrid Systems: Computation and Control** [author, speaker]
HSCC 2017	**International Conference on Hybrid Systems: Computation and Control** [author, speaker, demo]
EMSOFT 2016	**International Conference on Embedded Software** [author, speaker, poster]
womENcourage 2015	**ACM-W second womENcourage Celebration of Women in Computing** [poster, granted]
FORMATS 2015	**Formal Modeling and Analysis of Timed Systems**
CAV 2015	**27th International Conference on Computer Aided Verification**
CAV 2013	**25th International Conference on Computer Aided Verification** [author]

Workshops and seminars attended

AVM 2018	**12th Alpine Verification Meeting**
Dagstuhl 2016	**Dagstuhl Seminar on Robustness in Cyber-Physical Systems** [speaker]
HSB 2015	**4th International Workshop on Hybrid Systems Biology** [demo]
SNR 2015	**1st International Workshop on Symbolic and Numerical Methods for Reachability Analysis** [author, speaker]
VMW 2015	**Verification Mentoring Workshop** [granted]
PLMW 2013	**2nd SIGPLAN Programming Languages Mentoring Workshop** [granted]

Summer schools

ISOLA 2016	**4th International School on Tool-based Rigorous Engineering of Software Systems** [lecturer]
SAT/SMT 2015	**5th annual SAT/SMT Summer School**
Marktoberdorf 2013	**Summer School Marktoberdorf on Software Systems Safety** [granted]
CPS 2013	**Summer School on Cyber-Physical Systems** [poster, granted]
Fluid2Bio 2012	**Intensive Programme on Fluid Dynamics Turns to Biology**

Computer Skills

Languages	PYTHON, FORTRAN, C++, MATLAB, Turbo Pascal, COBOL, shell script, HTML, LaTeX, PL/SQL
Software	VMD, GROMACS, Gnuplot
Data Basis	DB2, Oracle
Operating Systems	Linux, Microsoft Windows, MVS

Languages

Spanish	Mother tongue
English	C1 level on reading and B2 on the rest
Italian	level A2 certified and good communication skills because I was living more than one year in Italy