

# Isabel GARCÍA CONTRERAS

## PERSONAL DATA

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## WORK EXPERIENCE

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CURRENTLY PhD Student at the IMDEA Software Institute, Madrid, Spain

AUG 2019 - DEC 2019 International Fellow at SRI International, Menlo Park, CA, USA

FEB 2014 - JUL 2015 Intern at the High Performance Computing and Networking Research Group, Universidad Autónoma de Madrid, Spain

## EDUCATION

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CURRENTLY Working on my PhD  
Dept. of Artificial Intelligence, **Universidad Politécnica de Madrid**

JUL 2016 European MSc in Artificial Intelligence  
**Universidad Politécnica de Madrid**  
Master Thesis: *Code Search: A Semantic, Abstract Interpretation-based Approach*  
Rating: 10/10

JUL 2015 Degree in Computer Engineering  
**Universidad Autónoma de Madrid**  
Final Project: *Generación de Flujos en Redes Multigigabit Ethernet Acelerada Mediante Hardware Dedicado*  
Rating: 10/10

Top of class of 2015

## PUBLICATIONS

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- [1] R. Bruni, R. Giacobazzi, R. Gori, I. Garcia-Contreras, and D. Pavlovic. Abstract Extensionality – On the Properties of Incomplete Abstract Interpretations. In *Proc. ACM Symposium on Principles of Programming Languages 2020*, January 2020.
- [2] I. Garcia-Contreras, J. F. Morales, and M. V. Hermenegildo. Semantic Code Browsing. *Theory and Practice of Logic Programming, 32nd Int'l. Conference on Logic Programming (ICLP'16) Special Issue*, 16(5-6):721–737, September 2016.
- [3] I. Garcia-Contreras, J. F. Morales, and M. V. Hermenegildo. Towards Incremental and Modular Context-sensitive Analysis. In *Technical Communications of the 34th International Conference on Logic Programming (ICLP 2018)*, OpenAccess Series in Informatics (OASICS). Dagstuhl Press, July 2018. (Extended Abstract).
- [4] I. Garcia-Contreras, J.F. Morales, and M. V. Hermenegildo. Experiments in Context-Sensitive Incremental and Modular Static Analysis in CiaoPP. In *10th Workshop on Tools for Automatic Program Analysis (TAPAS'19)*, October 2019. (Extended Abstract).
- [5] I. Garcia-Contreras, J.F. Morales, and M. V. Hermenegildo. Multivariant Assertion-based Guidance in Abstract Interpretation. In *Proceedings of the 28th International Symposium on Logic-based Program Synthesis and Transformation (LOPSTR'18)*, number 11408 in LNCS, pages 184–201. Springer-Verlag, January 2019.

- [6] I. Garcia-Contreras, J.F. Morales, and M. V. Hermenegildo. Incremental Analysis of Logic Programs with Assertions and Open Predicates. In *Proceedings of the 29th International Symposium on Logic-based Program Synthesis and Transformation (LOPSTR'19)*, LNCS. Springer-Verlag, 2020.

## RESEARCH INTERESTS

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My research interests include static analysis and verification of software, abstract interpretation, in particular, how to perform them in a scalable way, (constraint) logic programming, and semantic code search.

## PROJECTS

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I have participated in the projects:

2016 - now    *TRACES Technologies and tools for Resource-Aware, Correct, Efficient Software*. Code: TIN2015-67522-C3-1-R. Spanish MINECO.

## TEACHING

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FEB - JULY 2020    *Declarative programming: Logic and constraints*, School of Computer Science, Technical University of Madrid (UPM)  
FEB - JULY 2019    *Declarative programming: Logic and constraints*, School of Computer Science, Technical University of Madrid (UPM)

## TALKS

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MARCH 2020    *Modular Verification of C Programs*, IMDEA Software Institute, Madrid, Spain.  
DEC 2019    *Modular Verification of C Programs*, SRI International, Menlo Park, CA, USA.  
OCT 2019    *Experiments in Context-Sensitive Incremental and Modular Static Analysis in CiaoPP*, TAPAS'19, Porto, Portugal.  
OCT 2019    *Incremental Analysis of Logic Programs with Assertions and Open Predicates*, LOPSTR'19, Porto, Portugal.  
MAY 2019    *CODE. ANALYZE. REPEAT. Incremental and Modular Static Program Analysis*, Simposio 2019: My Thesis in a Nutshell, UPM, Madrid.  
FEB 2019    *Cocinando la informática*, Int'l Day of Women and Girls in Science, I.E.S. San Isidro, Madrid, Spain.  
OCT 2018    *CODE. ANALYZE. REPEAT. Incremental and Modular Static Program Analysis*, womENCourage'18, Belgrade, Serbia.  
SEP 2018    *Assertion-base Guidance in Abstract Interpretation*, LOPSTR'18, Frankfurt, Germany.  
JUL 2018    *Towards Incremental and Modular Context-sensitive Analysis*, ICLP'18 - FLoC'18, Oxford, UK.  
JUN 2018    *Towards Better User Guidance in Abstract Interpretation*, IMDEA Software Institute, Madrid, Spain.  
JUL 2017    *Code Search: A Semantic, Abstract Interpretation-based Approach*, Jornadas SISTEDES'17, La Laguna, Spain.  
JUN 2017    *Incremental and Modular Context-sensitive Analysis*, IMDEA Software Institute, Madrid, Spain.  
OCT 2016    *Semantic Code Browsing*, ICLP'16, New York, USA.  
JUN 2016    *Abstract Code Browsing*, IMDEA Software Institute, Madrid, Spain.

## SCHOLARSHIPS AND PRIZES

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2017 - 2021	FPU PhD Grant 16/04811 by Spanish Ministerio de Educación y Ciencia
OCT 2018	1 <sup>st</sup> prize in womENCourage'18 Hackathon
JUL 2017	Best Ms. Thesis SISTEDES-Accenture Technology prize
2016	José Cuenca Award from the Department of Artificial Intelligence, UPM
2013 - 2014	Excellence Scholarship (Comunidad de Madrid, Spain)
2012 - 2013	Excellence Scholarship (Comunidad de Madrid, Spain)
SUMMER 2010	Scholarship of the German Embassy in Spain "Alumnos premio"
JUN 2010	2 <sup>nd</sup> prize of "Descubriendo la ciencia" from Auxilab

## OTHER ACTIVITIES

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FEB 2020	Co-organized " <b>Rompiendo códigos: Mujeres y niñas en la ciencia</b> ", celebrated in the framework of the International Day of Women and Girls in Science.
SPRING 2019	<b>Chair of the Software Seminar Series</b> (Spring season) at the IMDEA Software Institute.
MAR 2019	Participated in the <b>Madrid Science Fair</b> , disseminating the research that takes place in the IMDEA Software Institute to students.
FEB 2019	Co-organized " <b>I+D+M<sup>2</sup>: Mujeres en Montegancedo</b> ", celebrated in the framework of the International Day of Women and Girls in Science, it is a local conference to disseminate the work of female scientists of the Technical University of Madrid.
FEB 2018	Participated in a radio debate in the framework of the International Day of Women and Girls in Science.

## COMPUTER SKILLS

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Advanced Knowledge:	Prolog, c
Intermediate Knowledge:	LaTeX, git, gitlab, Docker, VHDL, verilog, C++
Basic Knowledge:	lisp, CUDA, bash, SPARQL, C#, HTML, PHP, CSS, python, SQL, Java

## LANGUAGES

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SPANISH:	Native	ENGLISH:	Fluent	GERMAN:	Basic
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