Isabel García Contreras

Personal Data

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Work Experience

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

Currently	Working on my PhD, Dept. of Artificial Intelligence, **Universidad Politécnica de Madrid**
Jul 2016	MSc in Artificial Intelligence, **Universidad Politécnica de Madrid**. Master Thesis: *Code Search: A Semantic, Abstract Interpretation-based Approach*
Jul 2015	Degree in Computer Engineering, **Universidad Autónoma de Madrid**. Final Project: *Generación de Flujos en Redes Multigigabit Ethernet Acelerada Mediante Hardware Dedicado* Top of class of 2015

Publications

[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. Incremental and Modular Context-sensitive Analysis. *Theory and Practice of Logic Programming*, page 1–48, 2021. arXiv:1804.01839.

[5] 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).

[6] I. Garcia-Contreras, J.F. Morales, and M. V. Hermenegildo. Multivariant Assertion-based Guidance in Abstract Interpretation. In *Post-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.

[7] 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, pages 36–56. Springer-Verlag, 2020.

Research Interests

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

I have participated in the projects:

2020 - 2024	PROCODE *Rigorous methods for the development of software systems with certified quality and reliability.* Code: PID2019-108528RB-C21. Spanish MICIIN.
2016 - 2020	TRACES *Technologies and tools for Resource-Aware, Correct, Efficient Software.* Code: TIN2015-67522-C3-1-R. Spanish MINECO.

Teaching

Currently	*Declarative programming: Logic and constraints*, School of Computer Science, UPM
Feb - July 2020	*Declarative programming: Logic and constraints*, School of Computer Science, UPM
Feb - July 2019	*Declarative programming: Logic and constraints*, School of Computer Science, UPM

Talks

Mar 2021	*Incremental and Modular Context-sensitive Analysis*, HCVS'21, Luxembourg, Luxembourg (virtual).
Mar 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

2017 - 2021	FPU Grant 16/04811 by Spanish Ministerio de Educación y Ciencia
Oct 2018	1^{st} prize in womENcourage'18 Hackathon
Jul 2017	Best Ms. Thesis SISTEDES-Accenture Technology prize
2016	José Cuena 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^{nd} prize of "Descubriendo la ciencia" from Auxilab

Other activities

Feb 2018	Participated in a radio debate in the framework of the International Day of Women and Girls in Science.
Feb 2019	Co-organized **"I+D+M^2: Mujeres en Montegancedo"**, 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.
Mar 2019	Participated in the **Madrid Science Fair**, disseminating the research that takes place in the IMDEA Software Institute to students.
Spring 2019	**Chair of the Software Seminar Series** (Spring season) at the IMDEA Software Institute.
Feb 2020	Co-organized **"Rompiendo códigos: Mujeres y niñas en la ciencia"**, celebrated in the framework of the International Day of Women and Girls in Science.

Computer Skills

Advanced knowledge:	Prolog, c, LaTeX, git, gitlab, Docker, vhdl, verilog, C++
Basic knowledge:	lisp, cuda, bash, sparql, c#, html, php, css, python, sql, Java

Languages

Spanish: Native | English: Fluent | German: Basic