

## Clara María Segura Díaz Profesora Titular de Universidad

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Clara María Segura Díaz is Associate Professor at the Faculty of Computer Science in the Complutense University of Madrid. She became Doctor in the Faculty of Mathematics of the same university in Computer Science specialization in 2001. Her Phd. Research framework was a parallel non-deterministic functional language called *Eden*, developed by two collaborating research groups in Complutense University of Madrid and Marburg University in Germany. She started working with Eden group supported by a research grant in the last year of the degree. After finishing the degree she was first supported by a grant of the Minister of Education (FPU-MEC) and then she got different teaching assistant positions. The main topic of her thesis, directed by Ricardo Peña, was the development of several static program analyses for Eden. More specifically, she developed an analysis for detecting bypassing of channels between Eden processes in order to optimize programs; an analysis for detection of non-determinism; and another one of termination/productivity to prove absence of deadlock and/or non-termination in parallel skeletons. Along those years she participated in two national projects (TIC97-0672 y TIC2000-0738), in an Integrated Action (HB1999-0102) and in a project of the Community of Madrid (06T/033/096).

After her Phd thesis defense, she continued working in the area of static analysis of functional languages in a project that developed a functional language called *Safe* with facilities to explicitly manage memory. The aim was to investigate the viability of functional languages to program small devices and embedded systems with restricted memory. She worked in the development of a region analysis memory, a memory leaks absence analysis and another one for space consumption. These topics were part of Manuel Montenegro's thesis which was directed by herself and Ricardo Peña.

Simultaneously she joined the research group led by Narciso Martí Oliet that was working on the development of programming models for distributed and mobile computation and the verification of security properties for that programs. She worked in the application of type systems to prove security properties in Ambient Calculus. She participated in five national projects (TIC2003-0100, TIN2004-07943-C04-04, TIN2006-15660-C02-01, TIN2008-06622-C03-01/TIN y TIN2009-14599-C03-01) and two of the Community of Madrid (S-0505/TIC/0407 y S2009/TIC-1465). In 2005 she got a doctor assistant professor position and in 2009 her current Associate Professor position.

Currently she is working in a project for developing an integrated environment for the validation of programs written in different programming languages, both imperative and declarative ones. She works in the automatic verification of programs by extending a *liquid type system* that allows to infer invariants with universal quantification for programs that manipulate arrays. In the last years she has participated or is participating in two national projects (TIN2017-86217-R, TIN2013-44742-C4-3-R) and another one of the Community of Madrid (P2013/ICE-2731).