DEPARTAMENTO DE INFORMÁTICA

PLASTIC TEAM @ CITI

SOFTWARE SYSTEMS / PLASTIC Team

CHi CENTER FOR INFORMATICS AND INFORMATION TECHNOLOGIES

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Objectives

My research field is Computer Science, Software Systems.

My research group is the PLASTIC Team at CITI (6 researchers, 9 PhD students).

A key challenge for Computer Science research is how to provide new specification, programming, and analysis methods and tools to make sure complex software systems do not go wrong (a hot research topic for decades).

The PLASTIC@CITI research program targets the development of programming language-based and analysis techniques and tools for better understanding and constructing more sophisticated, robust, secure and easily modifiable software.

GScholar says that I published with 36 co-authors and 8 PhD students. Thanks!
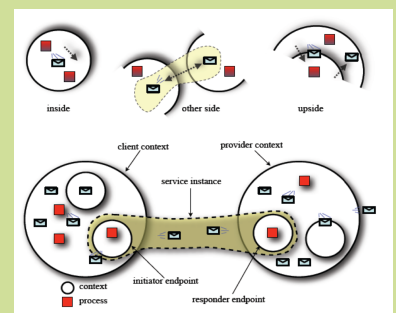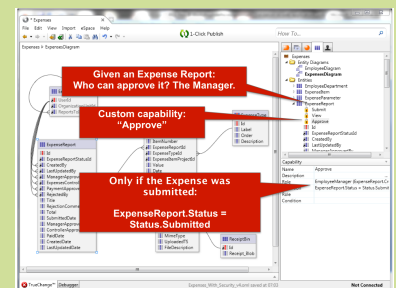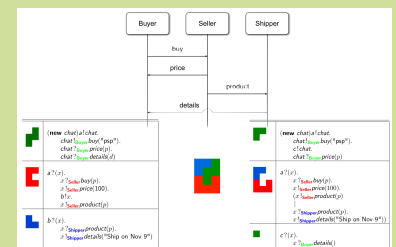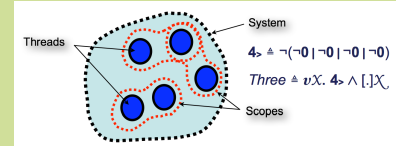
Key contributions (last 10 years)

Our work often builds on deep mathematical foundations, but it is always motivated by the goal of developing powerful and practical software development tools.

✔ We invented "spatial logics for concurrency" (with Cardelli, Microsoft Research), for model-checking distributed systems (2000-..)

✔ We introduced (with Seco) the first published core language for object-based (e.g., Java-like) typed component oriented programming (2000-…).

✔ We are devising techniques to validate web applications against high level integrity and security requirements (recent patent filed with OutSystems SA, 2012).

✔ We introduced the first purely logical analyses for distributed session protocols (with Pfenning, Carnegie Mellon, students and collaborators) (2010-..)

✔ We built software analysis tools and compilers such as SLMC (with Vieira), Component J (with Seco), and LiveWeb (with Seco and students) (2001-..)

✔ We have defined (with Vieira) a highly general verification method for multi-party conversations between services in a distributed system such as the web (2007-…)

✔ We developed (with Seco) "behavioral-separation types" that help programmers avoid concurrency errors in programs (2013-..)