DESCRIPTION
The Department’s research in this area covers a rich variety of topics, including: automated static analysis, cryptography, formal language definitions, formal methods, formal security models, formal software verification, logic and verification, malware and its mitigation, massively parallel systems, network security, parallel programming languages, security protocols, security services, semantics, social aspects of security and privacy, software and application security, software architectures, software functional properties, software reverse engineering, software system models, software verification and validation, system description languages, trust frameworks, Unified Modeling Language (UML), web protocol security.

LABORATORIES
QUILAB: Quantum Informatics Laboratory
REGIS: Research Group in Information Security
SPY: Static Analysis by Abstract Interpretation

PROJECTS (2012-2016)
- FACE: Formal Avenue for Chasing malwarE. A FIRB 2013 project aiming at the analysis and detection of modern malware with particular interest in Android malware applications. Modern malware attempt to evade both dynamic and static detection by means of anti-debugging, obfuscation and metamorphism techniques. FACE proposes to combine static and dynamic analysis into an hybrid approach in order to better understand and therefore detect modern malware.
- TRENDS: Technologies and Resources for Exploiting interNet Documents and Social media, joint project with Techne Media Agency. Nowadays, people make more and more often digital actions related to various aspects of their life. The huge amount of data generated by users is the basis of a behavioral mutation that is not yet well defined, but is a sign of an almost anthropological change in people. The project investigates these aspects, using specialized tools, designed specifically to intercept the communications into the network, and with new ways of understanding the digital lexicon.
- ABSCRIPT: Abstract interpretation based analysis of Scripting Languages, joint project with Maxfone. The project is intended to the design and implementation of an static analyzer for PHP based on abstract interpretation and insensible on dynamic code mutations as caused by reflection. Modeling reflection in dynamic languages is a particularly hard problem because this feature breaks on of the fundamental bases of static analysis, which is the static structure of the program to be analyzed.
SELECTED PUBLICATIONS (2012-2016)

PEOPLE (2017)

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