

# COMPUTER SCIENCE AT THE GRAN SASSO SCIENCE INSTITUTE

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Over the last three years, you might have read calls for PhD positions in computer science at the Gran Sasso Science Institute (GSSI)<sup>1</sup> in L'Aquila, Italy. Those calls included a link to a web site with some information about the GSSI. However, some potential applicants, and colleagues in general, might be interested in knowing more about the computer science group at this new institute, without having to browse through a series of web pages. I therefore decided to collect some relevant information on computer science research at the GSSI in this short contribution to the Bulletin of the European Association for Theoretical Computer Science in the form of a FAQ. I hope that this piece may be of help to students and computer science researchers who might wish to consider working at the GSSI, visiting the institute or establishing research collaborations with its members, possibly leading to joint or double PhD agreements.

**What is the GSSI?** The GSSI is a recently established university in Italy. It is an institute for advanced study and an international PhD school, having English as its official language. It is located in L'Aquila, Italy, in the beautiful Abruzzo region. It focuses on astroparticle physics, computer science, mathematics and urban studies.

**What areas of computer science are covered at the GSSI?** Information on research in computer science at the GSSI may be found at <http://cs.gssi.infn.it/>. In short, the computer science division at the GSSI focuses on three main areas, namely the algorithmic study of computer and social networks (as covered, for instance, by ICALP Track A and Track C), specification and analysis of reactive systems, and software engineering techniques for building usable and

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<sup>1</sup><http://www.gssi.it/>

easily maintainable distributed applications. Theoretical research plays an important role in each of these three areas and provides a common ground amongst them.

**Who works in computer science at the GSSI?** The computer science division of the GSSI is still in its infancy and has ambitious growth plans in the short to medium term. In the area of algorithms, Michele Flammini, Gianlorenzo D'Angelo (recipient of the 'Best Italian Young Researcher in Theoretical Computer Science' award for 2016 of the Italian Chapter of the European Association for Theoretical Computer Science) and Mattia D'Emidio have been the first researchers working at the GSSI in this area.

Rocco De Nicola (whose main affiliation is at IMT Lucca) has been the director of the computer science programme and has spearheaded the work in formal methods, together with Omar Inverso. I joined the GSSI as a professor from September 2017.

Work in software engineering has been carried out by Ludovico Iovino, Catia Trubiani and people in the high-profile research group in software engineering at the University of L'Aquila led by Paola Inverardi. Former GSSI postdoc Ivano Malavolta is now an assistant professor in data-driven software engineering at VU Amsterdam, and is jointly supervising some students at GSSI.

**Apart from the faculty at the GSSI, with whom can PhD students interact there?** The computer science division at the GSSI has a vibrant guest lecturer programme, with frequent visits by top-class researchers from all over the world, as well as affiliated faculty. See <http://cs.gssi.infn.it/people/> for the list of scientific collaborators and lecturers from other institutions to date.

**How is the scientific environment in computer science at the GSSI?** The group runs a seminar series and has already hosted conferences and workshops. In the period 12–14 September 2017, it has hosted SAGT 2017 at GSSI. Other events are in the works.

**How many PhD students in computer science are there? What do the graduates do after their PhD?** The computer science division at the GSSI hosts about 30 PhD students at all times. (You can see the list of current students at <http://cs.gssi.infn.it/people/>.) The institute is about three years old, so only some of the first batch of students have graduated or are about to do so. All of those have found postdoctoral positions at institutions in Italy. Two GSSI students who just submitted their theses will join Jukka Suomela's group at Aalto University from January 2018.

I hope that this short piece has given you a first impression of (theoretical) computer science research at the GSSI. As I wrote above, the computer science division of the GSSI is still in its infancy. In my, admittedly biased, opinion, it has the potential to offer a positive contribution to the development of our field and to become a strong doctoral school. Time will tell whether the institute will realize its ambitions and its potential.