Vacancy number: core-2

LIACS

The *Leiden Institute of Advanced Computer Science* (LIACS) is the computer science institute of Leiden University, one of the eight research institutes of the Faculty of Science. It is engaged in research and education in the area of Computer Science. It collaborates with several national and international institutes, and has formal affiliations with the national research schools Advanced School for Computing and Imaging (ASCI) and the Institute for Programming Research and Algorithmics (IPA). The research areas of LIACS range from theoretical to applied computer science with the research clusters Algorithms and Foundations of Software Technology, Computer Systems, Imagery and Media, and Technology Innovation Management.

The *Foundations of Software Technology* cluster is specialized in formal methods for distributed, object-oriented, and component-based systems, with research areas in logical, algebraic and coalgebraic methods.

CWI

The *Centrum Wiskunde & Informatica* (CWI) is the national research institute for mathematics and computer science of The Netherlands. It is a private, non-profit organization aiming at fostering mathematics and computer science research in The Netherlands. Scientific research is organized in four scientific clusters. The *software engineering* (SEN) cluster focuses its research on various aspects of software engineering, evolutionary systems and multimedia applications. Typical research questions deal with analysis and transformation of software systems, verification of embedded systems, composition of concurrent systems, behaviour of competitive agents, and design of multimedia players. For fundamental research, extensive cooperations exist with Dutch universities and international partners.

Research in the *Coordination Language* (SEN3) group focuses on the development of solid mathematical foundations, including semantics, proof theory and coalgebra for the study of interaction, composition, and coordination of concurrent distributed systems.

We offer two *positions* for PhD Student on the NWO funded research project

***CoRE: Coinductive Calculi of Regular Expressions* (38h.wk)**

The purpose of the project is to use the theory of coalgebras and Kleene algebras for automatic reasoning and verification of quantitative and probabilistic systems, interactive systems and advanced functional programs.

Your profile

You must have a degree (drs./MSc) in the domain of mathematics, computer science or a related area and have a strong interest in the field of mathematical foundations of computer science. We look for excellent candidates, who fulfill entry requirements for the Ph.D. program at LIACS and CWI and who want to engage in collaborative research with other international universities and fellow scholars.

We offer

There are two PhD positions available. One candidate will be employed at LIACS in the Foundations of Software Technology (FAST) group, in the sub-group *Logic, coalgebra*

and algebra, led by Dr. M.M. Bonsangue. The other will be employed at CWI in the oordination Languages group (SEN3) in the sub-group *Coalgebraic Models of Computation* led by Prof. J. Rutten. Both groups provide a dynamic and productive work environment, are in close collaboration with each other and are involved in several national and international research projects.

Appointment will be according to the terms of the Collective Labour Agreement of Dutch Universities and research institutes (CAO Nederlandse Universiteiten), for a period of one year with an extension of three years after positive evaluation of capabilities and compatibility. Ultimately the appointment must lead to a completion of a PhD thesis. During your appointment you will be supervised by Dr. M.M. Bonsangue, Dr. M. Niqui, and Prof.Dr. J. Rutten.

The gross monthly salary is set to € 2.042,- in the first year up to € 2612,- in year four. An appointment with Leiden University or CWI includes a pension build-up and facilitates other benefits such as an annual holiday premium of 8% and an end-of-year premium of 8.3%.

The LIACS PhD student will be embedded in the Leiden University Graduate School of Science www.graduateschools.leidenuniv.nl offering several PhD training courses at three levels: professional courses, skills training and personal effectiveness. Both PhD students will be part of the Research School of the Institute for Programming Research and Algorithmics (IPA) offering advanced courses to deepen scientific knowledge.

Further information and applications
For more information, please contact

Marcello Bonsangue (marcello@liacs.nl) or Milad Niqui (M.Niqui@cwi.nl)

Additionally, you can visit the websites of LIACS, and CWI: www.liacs.nl and www.cwi.nl. More information on employment at Leiden University can be found at: www.leiden.edu.

Please apply by sending your written application before **1 March 2010**, using the vacancy number, including full Curriculum Vitae (including a list of master courses), an abstract of your master thesis or a list of publications, and the names and contact addresses of two references to:

LIACS
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