

PhD position Neogeography: the challenge of channeling large and ill-behaved data streams (1 fte)

The University of Twente is an entrepreneurial research university, located in Enschede, the Netherlands. Organized over five faculties, the UT offers 20 educational programs ranging from applied physics, public and business administration, communication studies and diverse programs in engineering technology. The Computer Science department of the Faculty of Electrical Engineering, Mathematics and Computer Science (EEMCS) is one of the largest academic institutions in computer science in the Netherlands. It provides courses in Technical Computer Science, Business Information Technology, and Telematics. In addition, the department contributes to computer science education within other academic programs. The research of the department, spearheaded by telematics and information technology, is part of the multidisciplinary research institute Centre for Telematics and Information Technology (CTIT). The department has about 270 permanent staff members and 1200 students.

In the Chair of Databases we have an open position for a PhD student Neogeography: the challenge of channeling large and ill-behaved data streams

Project description

In this project, we develop XML-based data technology to support the channeling of large and ill-behaved neogeographic data streams. In neogeography, geographic information is derived from end-users, not from official bodies like mapping agencies, cadasters or other official, (para-)governmental organizations. The motivation is that multiple (neo)geographic information sources on the same phenomenon can be mutually enriching.

Content provision and feedback from large communities of end-users has great potential for sustaining a high level of data quality. The technology is meant to reach a substantial user community in the less-developed world through content provision and delivery via cell phone networks. Exploiting such neogeographic data requires a.o. the extraction of the where and when from textual descriptions. This comes with intrinsic uncertainty in space, time, but also thematically in terms of entity identification: which is the restaurant, bus stop, farm, market, forest mentioned in this information source? The rise of sensor networks adds to the mix a badly needed verification mechanism for the real-time neogeographic data.

We strive for a proper mix of carefully integrated techniques in geoinformation handling, approaches to spatiotemporal imprecision and incompleteness, as well as data augmentation through sensors in a generic framework with which purpose-oriented end-user communities can be served appropriately.

This PhD position focuses on spatiotemporal data technology in XML databases and theory and support technology for storage, manipulation and reasoning with spatiotemporal and thematic uncertainty. The work is to be validated through testbed use cases, such as the H2O project with google.org (water consumers in Zanzibar), AGCommons project with the Gates Foundation (smallholder farmers in sub-Saharan Africa), and other projects with large user communities.

What we ask

We are looking for a candidate with a MSc. degree in computer science, databases, geoinformatics, software engineering, mathematics (with a computer science

specialization), or an equivalent degree. The work involves both theory (logic and statistics) and practice (implementation of the technology and experimental evaluation). The candidate must provide good communication skills, in writing as well as oral. Your main task will be to do research, but you will be given opportunities to acquire some teaching experience. The selected candidate will be embedded in a joint research project with ITC, Enschede, and will closely collaborate with a PhD candidate from that institute.

What we offer

We offer a full-time PhD position in a dynamic and international environment. The duration of the contracts is four years. The gross salary will range from € 2.042,00 in the first year to € 2.612,00 per month in the fourth year.

Additionally, the University of Twente provides excellent facilities for professional and personal development. In addition, we offer a holiday allowance (amounts to 8%) and an end-of-year bonus of 8.3% (which is approximately an extra month of salary) and a number of additional benefits. The labor agreements are in accordance with the CAO-NU for Dutch universities.

Information and application

Information can be obtained from Dr.ir. Maurice van Keulen, email:

m.vankeulen@utwente.nl.

If you can meet the above mentioned requirements, you are invited to send your application letter together with:

- curriculum vitae
- a list of publications
- a list of courses you have followed (with grades)
- the names and addresses of two referees

before October 4, 2009 by email or on paper to our secretary, email:

db_sec@ewi.utwente.nl, Faculty of EEMCS, University of Twente, Zilverling 3047, P.O. Box 217, 7500 AE Enschede, The Netherlands, phone: +31 53 489 3690.

Please refer to the vacancy number 09/189