



S I M U L A T I O N & V I R T U A L R E A L I T Y S Y S T E M S

RESEARCH ASSISTANT IN COMPUTER SCIENCE (3D GRAPHICS AND VISUALIZATION)

Open position for a researcher in the area of real-time 3D visualization of massive geographic and CAD datasets at DIGINEXT. This position is for an EU-FP7 Marie Curie Actions Initial Training Network called DIVA: Data Intensive Visualization and Analysis.

PROJECT

The DIVA project is an international EU-FP7 Marie Curie Initial Training Network (ITN) funded by the European Commission with a focus on structured and collaborative research and teaching activities in Data Intensive Visualization and Analysis methodologies in data-driven science and technology application domains. DIVA involves three academic institutions (University of Zürich, University of Rostock and Chalmers Technical University), one research lab (CRS4), two industrial partners (DIGINEXT and Holografika) and a group of prestigious associated partners such as nVidia, ATI, Airbus...

This open position is for a research assistantship in a PhD program in DIVA, specifically in computer science with a focus on interactive 3D computer graphics and scientific visualization. With the continuing advances in data acquisition and simulation techniques, increasingly large 3D data sets have to be processed and interactively displayed for real-time visual exploration. The emphasis of the open position in this context is on the efficient scalable out-of-core and parallel visual data processing of very large geospatial (geographical, cartographical, and architectural) and CAD 3D datasets, including advanced data processing tasks such as e.g. feature extraction, geospatial querying, etc. Targeted application domains include the aerospace industry in partnership with Airbus, geo-visualization, urban planning, architectural modeling in partnership with Blom ASA and CEREN.

Ongoing research on the topic at DIGINEXT includes the V-City RTD project (<http://vcity.diginext.fr>), the VirtualGeo product the company develops since 1999 (<http://www.virtual-geo.com>), as well as the Airbus Virtual Aircraft projects the company is involved in.



On the part of the applicant, this requires interest not only in 3D graphics related algorithms and data structures but also in the task and data complexity of the targeted application, and collaboration with domain scientists, industrials and other institutions. Furthermore, a strong interest and good skills in learning new programming frameworks, 3rd-party code and applied mathematics is necessary, as the targeted research project also builds on other and previously developed techniques.

The activities of the position not only include research and continuing education for PhD students, but also support in teaching as well as administrative tasks. The main goal is to conduct excellent research on industrial problems generating results which are published and presented in top international journals and conferences, and to eventually work towards achieving a PhD degree through the writing and defense of a doctoral dissertation.



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COMPANY

This advertised position is at DIGINEXT (DXT), a 100% owned subsidiary of CS, a major European software services and system integration company. DIGINEXT hosts the Simulation and Virtual Reality division of the group. By creating such a division as soon as 1995, CS Group was one of the industrial pioneers in the field. This division regroups today 65 PhDs and engineers specialized in high performance interactive 3D. It is among the world's industrial top ranking research and development centre with internationally acknowledged experts, and publications and presentation of results in the most prestigious conferences and journals (e.g. SIGGRAPH, Eurographics...). The division has developed many successful innovative 3D applications and products such as VirtualGeo™, The virtual aircraft maintenance trainer (Airbus), Hydronaute, a system for the monitoring and analysis of 3D oceanographic information around the globe in real-time (French Space Agency), etc

WORKPLACE

The main premises of DIGINEXT's Simulation and Virtual Reality Division are located in the sunny city of Toulouse, the French Aerospace city, in the south west of France close to Spain, ski resorts, the Mediterranean sea and the surf beaches of the Atlantic Ocean. The premises of the company are close to both the city center and the spectacular "Cit  de l'espace" Theme Park.

The DIVA project involves frequent interactions, internships, workshops and summer schools with the other international network partners. Hence the workplace incorporates short stays at other research labs and companies in other European countries and cities (i.e. Switzerland, Italy, Germany, Sweden, France and Hungary).

BENEFITS

ESR fellows and PhD students are remunerated according to EU-FP7 regulations for Marie Curie ITNs as well as according to local host regulations. ESR and PhD appointments will be made with respects to local host university and company guidelines. Same applies for fringe benefits and vacation days.

REQUIREMENTS

- A MSc degree in computer science or closely related area from a research university is required to enter the PhD program.
- Applicants must not have resided or carried out their main activity in France for more than 12 months in the 3 years immediately prior to their recruitment.
- The prospective candidates are supposed to have an excellent background in computer science and systems as well as strong mathematical skills and practical experience with computer graphics. Exposure to parallel programming and distributed systems is also welcome. Strong interests in collaboration with domain scientists and industrials is of further importance as well.
- Applications must include a detailed CV/resume, information of university level educational background and practical work experience in computer science or a closely related field, a statement of motivation and clear exposition of prior graphics experience. Certified copies of transcripts and reference letters should be enclosed.
- Applicants are obliged to engage in the DIVA training and research activities and, if applicable, PhD students in an organized PhD training program at the host institution.



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DATES AND MORE

- Entrance is subject to the successful evaluation of candidate(s) and the confirmation of the expected start date by the European Commission.
- Duration is expected to be about 3 years for PhD students

CONTACT:

Monique Geyres

Simulation & Virtual Reality Division
DIGINEXT
5 Rue Brindejonc des Moulinais
BP 15872
31506 Toulouse Cedex 5 - France

URL: <http://www.diginext.fr>
email: monique.geyres@diginext.fr