UNIVERSITÄT DUISBURG ESSEN

Offen im Denken

Information for applicants for the

Junior Professorship

“Computational Methods in Modeling and Analysis of Learning Processes”

in the Department of “Computer Science and Applied Cognitive Science” (INKO)
of the Faculty of Engineering

Universität Duisburg Essen
Forsthausweg 2 · 47051 Duisburg und Universitätsstraße 2 · 45141 Essen

www.uni-due.de

I. UNIVERSITY OF DUISBURG-ESSEN

UNIVERSITY OF DUISBURG-ESSEN:
Open-Minded

The University of Duisburg-Essen is located in a region boasting the highest concentration of universities in Europe. Almost 42,000 students are enrolled here and, with a total 3,640 academic and non-academic staff members, the university clearly occupies an important position among the employers in the region. Established on 1 January 2003, the result of the merger between two previously independent institutions – the University of Duisburg and the University of Essen (both of which were first founded in 1972) – the University of Duisburg-Essen is the youngest university in North Rhine-Westphalia. This new twin-campus university in the center of the Rhine-Ruhr region has made good use of opportunities given to strengthen and showcase its research and teaching potential, a potential recognized well beyond the borders of the region. Offering a broad range of subjects, the University of Duisburg-Essen has already notched up a good name for itself in fields as disparate as social sciences, economics, the humanities, design, engineering and natural sciences, including medicine. Students from 130 nations come here to pursue their studies. Students can graduate on the basis of the traditional degree structure in education and medicine. Or they can obtain a new Bachelor's or Master's degree in a growing number of disciplines. A high priority is given to expanding these consecutive – often interdisciplinary – courses since they meet international standards and attract students from far and near. Furthermore, the University offers working professionals ("mature students") a number of attractive courses which, thanks to the modern integrated e-learning methods on offer, are geared to the learning speed of the individual student. In many disciplines the University Duisburg-Essen belongs to the Top 10 of the most successful research universities is Germany. External funding was doubled within the last five years. The University has five main research areas:

- nanoscience
- genetic medicine and medical biotechnology
- urban systems, logistics and transport, and
- transformation of contemporary societies.

During its founding phase, the University's innovative management also attracted a large amount of attention mainly because of the broad-based project approach taken to quality development. All the faculties and central institutions of the University have their products, services and processes regularly reviewed by the University's own Center for University and Quality Development.

Further Information:

https://www.uni-due.de/imperia/md/content/dokumente/ppt/ppt_praesentation_ude_en.pdf

II. THE FACULTY OF ENGINEERING

FACULTY OF ENGINEERING:
ALL ENGINEERING DISCIPLINES IN ONE LOCATION

The Faculty of Engineering Sciences of the University of Duisburg-Essen, offers - in addition to the classical fields of Mechanical, Electrical and Electronics, Information Technology and Applied Cognitive Sciences, Material Sciences, Technical Teaching, and Civil Engineering - a nationwide uniquely integrated spectrum of interdisciplinary engineering options that meet each and every demand of the modern and innovative education and research.

With approximately 11.600 students, a third of whom are from the international scene, the faculty is a strong and respected partner for the industries in the region and beyond. Graduates from our programs enjoy a high reputation as a result of the broad technical know-how as well as the uniquely interdisciplinary and internationally oriented structure of the programs. Classical courses such as Mechanical, Electrical, Material Sciences, Civil, and Applied Information Technology, rub shoulders with modern disciplines like Nanotechnology, Applied Cognitive and Media Science, Media Technology and Economic Engineering. In addition, social competency is strongly developed due to team work and interaction with the international students. Of particular note is the integrated international Bachelor/Masters Programs offered under the name “International Studies in Engineering (ISE)”, where 50% of the courses are in English. These courses are, as a result of our global standards and versatility, are not only sought after by the international students but also by many Germans enrolling at the university.

In the area of research, the department has an established investment of 60 million EUR for equipment and infrastructure, to develop the latest technologies and to continue with fundamental research. With three DFG special research areas and a DFG graduate program in the areas of Nanotechnology and Materials, the University is a frontrunner in this field in Germany as well as internationally. But also the fields of

- Mechatronics and Automation,
- Biomechanics,
- Ship Technology
- Microsystems and Medical Technology,
- Information Technology and Media,
- Energy and Environmental Studies
- Production and Material Technology
- Automotive Engineering

are core areas of research. The department has achieved a high international reputation, which is evident from the numerous research projects currently being worked on.

By focusing on these areas, the faculty has achieved a high international reputation, which is reflected in numerous research projects. In addition, the five affiliated institutes

- "Institute for Energy and Environmental Technology" (IUTA)
- "Fuel Cell Research Center ZBT GmbH" (ZBT)
- "Institute of Mobile and Satellite Radio Technology" (IMST)
- "IWW Water Centre"
- "Development Centre for Ship Technology and Transport Systems" (DST)
- "Fraunhofer Institute for Microelectronic Circuits and Systems" (IMS)

working closely with the faculty and implement a research budget of over 35 million euro each year. Due to all the projects that have been completed with the industry and other research institutes, the department and the affiliated institutes have now earned a reputation as an excellent partner for complex technological solutions as well as an ideal recruiting ground for top graduates.

III. DEPARTMENT OF COMPUTER SCIENCE AND APPLIED COGNITIVE SCIENCE (INKO)

Given the importance of information and communication technologies for all areas of economy and society, an applied and holistic approach to computer science is essential. Right from the beginning, research has to consider the final product and has to take economic, psychological and social aspects into account. Due to the ubiquity and increasing complexity of information systems especially the efficiency of interaction of human and technology forms a crucial condition for acceptance and success of innovative systems.

The department of Computer Science and Applied Cognitive Science of the University Duisburg-Essen meets these challenges by conducting consequently modern and applied research and teaching. In line with this, the department is organized interdisciplinary rendering it unique in Germany: The department includes 12 professorships for computer science and four professorships for psychology. The interdisciplinary research priority of the department lies with interactive systems and interactive media. As also the teaching is applied and interdisciplinary, the students benefit from a broad offer of courses and lectures. Three popular programs of study are offered: The Bache-lor/Master program Applied Computer Science provides a sound theoretical and methodological education in computer science. In the Bachelor program a focus can be laid on engineering computer science or media computer science. The master program permits to specialize e.g. on intelligent systems, interactive and cooperative systems or information engineering. The program Applied Cognitive and Media Science (KOMEDIA) is interdisciplinary and provides knowledge of computer science, psychology and economics. Also, the program conveys competences with regard to the design, development and usage of digital media, especially the internet. It furthermore focusses on the topic of human-computer-interaction. The third program of studies is Computer Engineering (Bachelor/Master) within the program International Studies in Engineering

(ISE). ISE Computer Engineering is focused on technological contents and is also popular outside of Germany.

Additional information can be obtained from: http://www.uni-due.de/iw/inko/de/

IV. REQUIREMENTS FOR THE POSITION “COMPUTATIONAL METHODS IN MODELING AND ANALYSIS OF LEARNING PROCESSES”

1. Research

Candidates for this position should be able and well prepared to represent the area of "Education in a Digital World" in academic teaching and research from the perspective of Computer Science. We are seeking persons with an excellent, internationally recog-

nized record in the development and application of computational methods for the modeling and analysis of human learning processes. The following subfields are of special interest: Learning Process Modeling / Learning Design, Educational Data Mining, Sensor Technology and Analytics in the context of monitoring and steering of learning processes (both, e.g., using eye-tracking), Semantic Technologies for Knowledge Modeling and Knowledge Diagnosis.

This junior professorship is part of the Engineering Faculty and is linked to the recently formed research platform "Education in the Digital World" (ForBild) in which researchers from Computer Science, Psychology, Educational Sciences and the Humanities cooperate closely on an interdisciplinary basis. In this dynamic, cross-faculty working context, the professorship develops its research approaches creatively and contributes actively to the strengthening of the research platform from the Computer Science perspective. The professorship should also cooperate with the DFG-funded Research Training Group on "User Centred Social Media" with a strong interdisciplinary orientation between Computer Science and Psychology. Accordingly, we expect a specific interest in interdisciplinary research as well as the willingness and competence to combine approaches from Computer Science with psychological/empirical research methods.

2. Teaching

The professorship should substantially contribute to complementing and deepening the existing teaching portfolio in the area of developing and analyzing interactive and cooperative learning environments. Course offerings should particularly reflect the needs of the established study programs KOMEDIA and Applied Computer Science and should include practice projects.

Detailed information about these study programs is available here:

> http://bmai.inf.uni-due.de/, http://www.uni-due.de/komedia/,
> http://www.uni-due.de/ise/.

The professorship should substantially contribute to complementing and deepening the existing teaching portfolio in the area of developing and analyzing interactive and cooperative learning environments. Course offerings should particularly reflect the needs of the established study programs KOMEDIA and Applied Computer Science and should include practice projects.

3. Further requirements

The post holder is expected to actively engage in joint interdisciplinary research collaborations within the INKO department and especially also with the research platform "Education in the Digital World" (ForBild). Important parameters for judging research activities and quality include peer-reviewed publications in internationally renowned venues, conference and workshop organization and journals as well as the acquisition of project funding.

V. STAFFING AND FACILITIES

The position will be remunerated according to level W1 of the German salary scale (see following section VI).

1. Staffing

It is intended to provide one full-time position (TV-L 13) for assistance in research and teaching Moreover, the junior professorship will have access to team assistance (secretariat) and technical support.

2. Amenities/rooms

Adequate office space will be provided. Details are subject to individual negotiation between the candidate and the university administration.

3. Funding

Continuous financial support for research and teaching is allocated by the department based on specific performance parameters and rules of distribution.

4. Infrastructure

An initial investment in work equipment of up to 50.000 Euro will be provided (details to be negotiated).

VI. LEGAL FRAMEWORK

The Law on the Higher Education in North Rhine-Westphalia (Higher Education Act - HG) from 16.09.2014, the university system has been fundamentally reshaped from 1.10.2014.

The universities are defined by the state supported, unincorporated public bodies. State funding is based on their duties, the agreed objectives and the services provided. They have a global budget and are not subject to transfer relationship with the Ministry of Innovation, Science, Research and Technology of North Rhine-Westphalia.

<u>Legal status of the high school teachers and university teachers</u>

Professors are employed by the statutory requirements, basically public officers for life. Professors can also be employed on a contract under private law.

Junior professors are appointed for a period of three years to public offer in time. The public officer status of junior professor is to be extended with his or her consent during the third year for another three years if he or she has proved to be a university professor.

Otherwise, the public officer can be extended with the consent of the junior professor by up to one year. During the sixth year the public officer of a junior professor can be extended with his or her consent by one year if he or she has proved to be a university professor. Junior professors are also engaged in a contract under private law.

For further information, (laws, directives etc.), please visit https://www.uni-due.de/verwaltung/organisation/peo_professoren.php (in German)

VII. SALARY

On 1 January 2005, the C-grade for professors was replaced for all newly appointed professors by a performance-oriented remuneration. It is part of the service law reform. The formerly standard seniority grades in the salary scale W (W for 'science') replaced by a system of basic salaries (W2, W3) plus "performance bonuses". The W salary scale shall apply from 1 January 2005 for all newly appointed professors and those who transfer to the W salary.

The current pay tables for grades W1, W2 and W3, see
http://www.lbv.nrw.de/beztab/beso.php (in German).

In addition, performance-related salary components, so-called performance bonuses. You can on the occasion of appointment and tenure negotiations (appointment and tenure bonuses), for outstanding achievements in research, teaching, art, training and professional development (special performance bonuses) and for the performance of functions or specific tasks within the university self-management or the university management (functional performance bonuses) will be awarded. For third-party funds, research and teaching allowances may be paid in certain circumstances.

Temporary performance bonuses are subject to the conclusion of target and performance agreements within the framework of appointment and tenure negotiations.

In the framework of appointment negotiations, any appointment-related performance bonuses are negotiated individually with the Rector of the University of Duisburg-Essen.

Information and legal bases the W salary scale available on the Internet at the following address: http://www.hochschulverband.de/cms/index.php?id=296 (in German)