

W2- Professorship Data Engineering in Mechatronic Systems

Faculty of Process Engineering, Energy and Mechanical Systems

Application deadline: 24.07.2025

Starting date: at the earliest opportunity

The general legal requirements in compliance with section 36 of the North Rhine-Westphalia Higher Education Act (Hochschulgesetz – HG) are as follows:

1. University degree
2. Proven track record of teaching ability, or as an exception, the teaching ability is to be proven during the first year through a probation period.
3. Particular proficiency in scientific work, usually demonstrated by the quality of the doctorate.
4. A strong track record in the application or development of academic findings and methods, gained during a minimum of five years of professional employment in a relevant field – at least three years of these five years must have been outside of a university environment.

Questions on the recruitment process to:

Jonas Tarlowski

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Gustav-Heinemann-Ufer 54

50968 Köln

Position-related questions to:

Prof. Dr. Mohiedinne Jelali

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Professional, didactic and methodical profile

You have a university degree in a field of engineering- or computational science, preferably information- or electrical-engineering, mechatronics or another comparable field of specialisation and you have a doctoral degree in a subject of the engineering sciences. You have spent at least five years gaining professional experience outside the higher education sector.

Professional Competences

So far, you have focused your studies on the field of computational science and artificial intelligence from a mechatronic point of view and have gained profound knowledge about their practical use in the engineering sciences. Above that, you have intensively addressed questions in the fields of data science & - engineering, artificial intelligence, machine learning, autonomous systems as well as cyber-physical systems and/or IoT and IoB. You research and develop advanced models and algorithms for AI applications, especially in the field of machine learning to address complex problems in the engineering sciences and make databased decisions. You use embedded and interconnected systems to conceptualise and develop functions for complex mechatronic Systems. Above that, your experience in the areas of software structures, industry 4.0 and cyber security or other areas interconnected with those mentioned is of advantage. Ideally, in the foreground of your work so far have been software solutions on the level of microcontrollers in control units, on industrial computers/ compact SPS as well as edge computing systems or large industrial automation and communication systems (decentralised/ distributed systems).

Research competences

You have a profound interest in research which is represented through high-level publications (peer-reviewed) focussing on one area of expertise. Ideally, you have already built your own communication network with other researchers. You have already acquired research funding both nationally and internationally. Your experience in collaborative research, interdisciplinary research co-operation, and as a manager of projects complete your profile.

You are able to create new transformational spaces and are interested in solving problems in society together with end users and private actors as well as those acting on behalf of the state. To achieve that, you actively search for inter- and transdisciplinary co-operations.

International competences

Preferably, you have partly gained your academical and professional experience abroad, have already succeeded in building up international contacts and co-operations, and are able and are willing to attend international conferences. You are also able to lecture in the English language.

You speak German on the level of a native speaker (GeR C2) and English on the level of (GeR C1).

Didactic competences

Your understanding of teaching is one of a community task to develop competences of a diverse student body in the best way possible. To achieve that, you continuously coordinate and discuss your teaching with your colleagues in the context of teaching- and curriculum- development. You see yourself as an academic mentor and actively add to the development of your students' competences by communicating trustfully and giving constructive feedback.

You are willing to scientifically reflect your own teaching and its quality as part of your process of self-development. You reflect your own teaching in the dialogue between you and your students and colleagues and cooperatively develop innovative settings for teaching and learning based on expertise in university didactics.

If possible, you have some experience in the conception and execution of courses. You are able to teach in the English language.

Leadership and management

You have a clear vision for your field of action and clear goals to achieve with your tasks. At the same time, your will to design and innovate characterise the way you work. You show a deep understanding for entrepreneurial thinking and acting strategically and you take responsibility for new paths of work and results. You can actively initiate new challenges.

Your leadership style is collaborative and motivating; Integrity and honesty as well as bravery and self-confidence are some of your character traits. You act according to your values and your goals. You are able to organise your own work and structure and coordinate your tasks efficiently. Your personal commitment and initiative are inspiring, and you are a reliable and binding person.

Interacting with colleagues and employees, you are capable of recognising different abilities and needs and you can show appreciation for the diversity that comes with it. You take responsibility for your employees and are able to give them space for their work as well as orientation. You see feedback as an important tool for successful work. You give constructive feedback and actively ask for it. You have experience in leading teams and managing projects - ideally using agile methods.

Social competences and communication

You take responsibility in different social settings and show your openness and curiosity in doing so. Your clear and constructive communication and your arguments are convincing. You are competent in moderating processes towards a result in a goal-oriented manner and you keep an eye on the relevant parameters throughout the process. You pursue networking beyond the borders of your own research community as well as the keeping of contacts in your existing networks. In doing so, you work team oriented and connect with already existing working- and research- groups as well as showing your willingness to establish co-operations with colleagues and employees from different areas of the university. Your attitude towards employees and students is attentive and appreciative. You listen actively and criticise constructively.

You have an understanding for group dynamics and dynamics in society. You can recognise and solve conflicts and address them adequately in the context of the abilities of the involved parties. By doing that, you are capable of mediating between different positions

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and of integrating them in working towards a solution. You are self-reflected and open to criticism, and you can adapt to different ways of working.

Transformational competences

Your ability to reflect your own work in the context of different technological developments and challenges in society is outstanding and you can see and incorporate new scientific findings in other academic disciplines into your own research. To solve the challenges of the 21st century is one of your concerns and you want to be part of the development of technologies, that is oriented towards a sustainable future. Hence, you question the status-quo and reflect the motives of your own actions and their consequences continuously. You are open towards experiments and the realisation of your projects, and you are able to let go of your own ideas if they prove to go beyond the technically realisable, the economically successful, and the acceptance of society but are not socially and ecologically tolerable. You can develop strategies for change, inspire people, and generate acceptance and participation. Your ability to inspire and convince people to allow change is outstanding. You can communicate beyond the borders of your discipline, and you thrive to find similarities and act responsibly towards differences.

The execution of other activities not part of the professorship is subject to the regulations governing part-time employment.

With the advertisement of this position and the publication of the requirement profile, the TH Köln specifies which competencies must exist to successfully fulfill the tasks of the professorship at the TH Köln. Depending on the focus of the professorship these competencies are weighted and checked in the selection procedure. The pre-selection is based on the written application documents. The necessary competencies of the shortlisted candidates will be determined in a lecture, a scientific presentation and a structured interview. The personal introduction is completed by an interview with a personnel psychologist. In case you are shortlisted and invited to a personal interview, you will be asked to submit a written teaching and research concept in advance. You will receive more detailed information with the invitation to the lecture, the scientific presentation and the structured interview.

Additional information

Place of residence

You are expected to move/relocate to the city in which your campus is located/situated or its greater area. Remuneration

Professors are remunerated in accordance with the W2 remuneration scheme (www.lbv.nrw.de: the remuneration scale for North Rhine-Westphalia as well as information on the family supplement are available on the website of the North Rhine-Westphalia State Office for Salaries and Pensions – LBV NRW – at). In addition to the family supplement, the remuneration provisions make allowance for other benefits (performance-related benefits), in particular benefits related to the appointment as well as benefits granted on the grounds of extraordinary contributions or for securing third-party funding for research purposes. The Provisions on Performance-related Benefits at Universities in North Rhine-Westphalia are in accordance with the law (Hochschul-Leistungsbezügeverordnung – HLeistBVO) of December 17, 2004. Additionally, Cologne University of Applied Sciences has introduced individual regulations in its guidelines on W2-remuneration. Detailed information on the W2-remuneration bracket is available here: th-koeln.de/besoldung

Employment as a civil servant or as a non-civil servant

Professors may only be employed as tenured German civil servants if they hold a full-time position and comply with all legal provisions (e. g. being younger than 50 years old). The

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possibility of becoming a tenured German civil servant is always determined on an individual basis, and candidates should therefore contact the Head of Division for lecturers and assistants in the human resources department (Mr. Thomas Neumann / Phone: +49 221-8275-5581 / Email: thomas.neumann1@th-koeln.de). When employed under non-civil-servant conditions, professors will be remunerated in accordance with W2 gross remuneration. In contrast to tenured civil servant contracts, professors employed under such provisions are required to pay social security contributions.

Additional employment

Full-time professorship: additional employment of up to eight hours per week may be authorized in compliance with the legal regulations for North Rhine-Westphalia (thus permitting work in positions of practical relevance). If you work on a freelance basis with your own office, then this is subject to specific conditions as laid down in the legal stipulations on additional employment for university personnel.

Part-time professorship (less than 50 %): If your work as a professor is less than 50 % then the legal stipulations on additional employment are not applicable.

Application information

Please apply via our application management system. Go back to the [job advertisement](#) and click here:

Apply here

Here we ask you for the personal data relevant for the processing of the application and to upload the following documents (maximum fill size 10 MB per file):

- cover letter
- photo (optional)
- curriculum vitae including list of publication and overview of the courses held (here or at the other documents)
- certificates (max. 5 files)
 - University certificates
 - job references or activity reports
 - certified translations in German or English for foreign certificates
- other documents
 - such as a list of publications
 - such as an overview of the courses held (evaluation)
 - **if necessary: professor's assessment (see page 1: The general legal requirements)**

In the application form you can select the option to submit the required professor's assessment within two weeks after the end of the application period.

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