

# **PROFESSORSHIP FOR ARTIFICIAL INTELLIGENCE**



## **INFORMATION FOR APPLICANTS**

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## 1. The Johannes Kepler University Linz (Austria)

The Johannes Kepler University Linz is a young European university with an expert and accomplished focus on the academic areas of social and economic sciences, law, natural sciences and engineering. The studies of Human Medicine were added in 2014. During its fifty year history, the university has achieved a national and international standing with its manifold achievements in research and teaching. The JKU is a campus-style university located north of the city of Linz. The unique campus environment provides close proximity between all disciplines. Interdisciplinary collaboration, innovative base-knowledge research, and close ties to local businesses and the business community have helped to establish its principal direction. By upholding principles of unity in research and teaching as well as fostering advanced methods of knowledge transfer, the JKU Linz generates and provides services for the greater good of society, the business community, fine arts and culture. Core target groups include students, the scientific community as well as organizations representing private and public life.

As the largest institution of research and education in Upper Austria, and thus as a knowledge transfer center, the university contributes to the continual support and development of Upper Austria as a dynamic economic region. The JKU is also actively involved in competence centers, and has developed spin-off programs that support the establishment of new companies.

## 2. The Faculty of Engineering & Natural Sciences

The Faculty of Engineering & Natural Sciences is comprised of 58 institutes in the following fields of base-knowledge research as well areas of application-oriented research:

- Computer Science
- Mechatronics
- Chemistry and Polymer Engineering Technologies
- Mathematics
- Physics

See: <http://www.tn.jku.at> for detailed information.

## 3. Objectives and Focus for the Professorship Position

In recent years, **Artificial Intelligence (AI)** has revolutionized infinite areas of science, setting a never before seen precedent for commercial applications. AI is the fastest growing field in computer science with the potential to change the lives of every human being in virtually every aspect. Humanity's great challenges - such as global health and world peace, global economy and industry, energy and resource management, climate change, crisis security, human rights protection, democracy, prosperity and free personal development - can no longer be addressed without applying corresponding methods of Artificial Intelligence. Even the process of acquiring scientific knowledge – regardless of the scientific discipline – is becoming increasingly dependent on methods in artificial intelligence to explore and understand complex relationships in data and design new experiments.

Commonly referred to today as "deep learning", AI is currently becoming more popular due to breakthroughs in machine learning. The university aims to raise the JKU's profile as a leading Austrian institution for AI and Machine Learning as well as established Computer Sciences at the JKU as one of Europe's leading institutions in AI and Machine Learning.

The environment for the professorship position in AI at the **JKU** is unique. There is a wide range of starting points for AI applications at the Faculty of Engineering & Natural Sciences, including autonomous driving, intelligent production plants, process optimization and process control. In addition, collaboration with the JKU Faculty of Medicine and the Kepler University Hospital means there are countless opportunities for AI applications in medicine. Whereas the JKU has top scientists in AI and related fields, the recently opened LIT AI Lab, the Audi.JKU Deep Learning Center, and the LIT Open Innovation Center provide essential interfaces. All of the research activities at the JKU are embedded in a long-term AI strategy plan outlined by the Upper Austrian government.

The AI professorship position is part of the JKU's **academic area of Computer Science** and has already demonstrated outstanding research competence in various areas of AI, particularly in Machine Learning, i.e. in Machine Learning/Deep Learning (Institute for Machine Learning), Machine Learning and Computer Perception (Institute for Computational Perception), Data Visualization and Visual Analytics (Institute for Computer Graphics), Information Retrieval & Extraction, Information and Knowledge Integration, Data Mining (Institute for Application-Oriented Knowledge Processing), Pattern Recognition (Institute for Signal Processing) as well as Embedded AI and Cognitive Computing (Institute for Pervasive Computing). The focus on machine learning is part of a strong research field in Artificial Intelligence and the JKU aims to continually expand and strengthen this field at the JKU. The professorship is embedded in this context of **Artificial Intelligence and Machine Learning** and will conduct research and teaching in core areas of Artificial Intelligence (concrete relevant research foci are listed in the section below).

## 4. Requirements for the Position “Artificial Intelligence”

The basic role is to represent the field of "Artificial Intelligence" in research, teaching, continual education as well as acquiring external funding. The professorship is part of the **academic area of Computer Science** and includes eventually chairing a department for Artificial Intelligence.

### 4.1. Research

In order to supplement the JKU's existing expertise in machine learning and formal methods with complementary research competencies, the JKU is seeking applicants who can demonstrate outstanding research accomplishments and planned innovative research projects in one or more of the following research fields, such as:

- Agent-Based and Multi-Agent Systems
- Constraints, SAT, SMT and Theorem Proving
- Heuristic Search and Optimization
- Knowledge Representation and Reasoning
- Machine Learning and Applications
- Natural Language Processing
- Planning and Scheduling
- Robotics and Cyber-Physical Systems
- Probabilistic Reasoning

The successful candidate will be asked to develop a research and innovation strategy that, in the medium-term, will propel the JKU to an internationally top-ranked position in research and innovation

in this area of computer science. The successful candidate is expected to collaborate closely with the entire academic area of Computer Science, particularly the institutes for Machine Learning, Computational Perception, Formal Models and Verification, Pervasive Computing, Computer Graphics, Signal Processing, as well as other relevant institutes and research facilities at the JKU.

As part of the application letter, applicants are requested to state the concrete topics and tasks they will address and work on within the research fields listed above in the event of being appointed at the JKU based on his/her area of expertise.

The candidate's application regarding his/her qualifications in research will be considered under the following criteria:

1. Research competence in a current area in the above listed research fields
2. Post-doctorate degree/habilitation (*venia docendi*), or a comparable, internationally recognized post-doctorate qualification, in the research area described above (please include documentation)
3. Professional activities related to the core task area of the professorship position
4. Academic and scientific reputation demonstrated by high-quality publications in international, peer-reviewed journals and at conferences in the academic area with a high relevance to the fields of activity as listed in the job profile (publication list, including 5-8 of the publications you consider most important and significant), academic/scientific presentations/lectures as an invited speaker (list of invitations as a keynote speaker), cooperation efforts in Austria and abroad, activities as an editor or reviewer, number and scope of conferences organized, etc.
5. International experience demonstrated through longer stays abroad, cooperation efforts with universities and research facilities abroad, as well as including and integrating international research
6. Proof of having acquired appropriate research funding; organizing and taking part and/or managing research projects (function, project volume, contracting party and/or funding organization, duration, project manager and/or number of full-time employees when managing the project)
7. Submit a research concept for future activities as the Professor for Artificial Intelligence at the JKU (under the classification of your previous work).

## 4.2. Teaching

The applicant will be expected to offer courses as part of the new Bachelor's and Master's degree programs in Artificial Intelligence and Computer Sciences as well as lectures in his/her field of expertise. The candidate is expected to actively take part in basic education as part of the Artificial Intelligence and Computer Science programs, as well as for faculty service courses. The successful candidate will teach the course "Introduction to AI" as part of the Bachelor's degree program in Artificial Intelligence. As many of the educational degree programs at the JKU are international, the successful candidate should be proficient in English and able to hold university-level courses and presentations in English.

The candidate's application regarding his/her qualifications in research will be considered under the following criteria:

1. Didactic skills
2. Experience in holding university-level courses (please include a list of held courses, incl. University didactic continual education courses and activities)

3. Experience supervising academic papers, such as Master's/Diploma degree theses and dissertations (include a list of supervised theses and dissertations).

### **4.3. Additional Requirements**

The successful candidate is expected to be willing to collaborate with research institutions in Austria and abroad as well as with industrial companies. Collaboration efforts should include the objective to acquire external funding.

Pre-requisites for the position include the ability to chair a department or, if applicable, an institute, a willingness to independently manage academic administrative tasks, and actively take part in university committees. In order to ensure that the organizational unit is successfully managed, in addition to key professional qualifications and management experience, the successful candidate should possess a strong professional and personal social skill set.

The candidate's application regarding his/her qualifications in research will be considered under the following criteria:

1. Previous research collaboration with partners at universities in Austria and abroad.
2. Qualifications and ability to manage organizational units, research projects, etc.
3. Qualifications and ability to lead cooperatively, for human resource development, and the advancement of women as well as taking part in gender mainstreaming projects.

### **4.4. Activities – Significance and Time Span**

Overall, equal importance is given in the areas of research and teaching.

The workload distribution is therefore 40% teaching, 40% research and 20% for the completion of administrative tasks and institute management responsibilities. When assessing candidate suitability for the position, this weighting will be taken into consideration.

## **5. Legal Contingencies**

Effective as of January 1, 2004, the structure of Austrian universities has been completely re-organized. They are independently financed on the basis of a three-year service level agreement with the Austrian government, have a global budget at their disposal, and are not subject to any directives by the Austrian Federal Ministry of Science and Research.

### **5.1. Terms of Employment**

All terms of employment, including a university professorship, are subject to the Private Sector Employees Act. A work contract between the university and the appointed professor confirms the professor's appointment. The Salaried Employees Act and the collective agreement for university employees provide the legal framework for all related labor, social, and pension conditions. An evaluation of all teaching and research activities will be conducted after a 5-year period to assess the fulfillment of all target agreements.

## 5.2. Pension Regulations

### 5.2.1. Pension

A pension account at the Pension Insurance Company for Employees (PVA) provides the basis to calculate the amount of pension. All pension account holders are registered for annual partial credits during insurance periods in the amount of 1.78% of the annual contribution basis and these are capped at the maximum assessment basis. The sum of the partial credits is the total credits that are re-valued annually. The total credit divided by 14 equals the amount of gross monthly pension. For more information about the pension you receive directly from the state, please contact the PVA.

### 5.2.2. Company Pension Fund for University Professors

In compliance with the 2002 Austrian Universities Act, a special pension scheme is provided for university professors and has been agreed upon in a Collective Agreement. The contribution payment made by the university is 10% for the set minimum salary as stated in the collective agreement. Voluntary salary payments agreed upon aside from the collective agreement minimum salary are not a part of the base calculation of the contribution payments.

## 6. Salary

The amount of the minimum salary for Group A 1 (Professorship) has been determined in the collective agreement for university employees and is a gross annual salary of 71.822,80 Euros per year (last update: 2019). Payment is allocated in 14 equal amounts, whereby two parts are special allocated payments.

The position as Professor for Artificial Intelligence provides a provision (on a voluntary basis) to agree on a salary over the minimum salary set by the collective agreement.

After a positive evaluation every six years – 4 times in total – there will be an advance to the next pay grade in accordance to the salary bracket in collective agreement for job category A1.

## 7. Application

Prospective applicants for the professorship position in “Artificial Intelligence” are requested to send the following documentation in electronic form to: [application@jku.at](mailto:application@jku.at). If documents cannot be sent in electronic format, they are to be sent in quintuplet copy and should arrive at the Rector’s office no later than one week after the end of the application deadline.

### 7.1. General Information

- Application form
- Letter of Intent (1 page)
- Tabular Curriculum Vitae
- Diplomas (Doctorate, Post-Doctorate/Habilitation)

## 7.2. Research

- Post-doctorate degree/habilitation (*venia docendi*), or a comparable, internationally recognized post-doctorate qualification
- Publication list including 5-8 of the publications you consider most important and significant
- Academic presentations/lectures (List of invitations as an invited speaker)
- International experience demonstrated through longer stays abroad, cooperation efforts with universities and research facilities abroad, as well as including and integrating international research
- Proof of having acquired appropriate research funding; organizing and taking part and/or managing research projects (function, project volume, contracting party and/or funding organization, duration, project manager and/or number of full-time employees when managing the project)
- Submit a research concept for future activities as the Professor for Artificial Intelligence at the JKU (under the classification of your previous work)

## 7.3. Teaching

- List of previously held university-level courses, including a list of held courses and university didactic continual education courses and activities
- List of supervised Diploma degree theses and doctoral dissertations from the past five years

## 7.4. Miscellaneous

- List of previous research collaboration with partners at universities in Austria and abroad
- Qualifications and ability to manage organizational units, research projects, etc.
- Qualifications and ability to lead cooperatively, for human resource development, and the advancement of women as well as taking part in gender mainstreaming projects.

## 8. Information

If you have any questions in regards to the job profile, please contact Univ. Prof. Dr. Sepp Hochreiter (+43 732 2468 4501, [hochreit@ml.jku.at](mailto:hochreit@ml.jku.at)).