

# **TENURE-TRACK FOR ARTIFICIAL INTELLIGENCE**



## **INFORMATION FOR APPLICANTS**

## **Index**

Index.....	2
1. General.....	3
2. Research .....	3
3. Teaching.....	5
4. Infrastructure.....	5
5. Additional Requirements .....	5
6. Tenure (Qualification) Agreement .....	6

## 1. General

This tenure-track position is announced within the scope of the funding programme of the State of Upper Austria in cooperation with FWF for a group leader of a Young Research Group in the field of Medical Engineering.

The Young Research Groups are funded by the State of Upper Austria as part of the STAR (Step Ahead Through Research) research funding initiative. FWF is responsible for the administration of the programme. For detailed information see: <https://bit.ly/2WuFbPw>.

The newly founded Artificial Intelligence Lab (LIT AI Lab) at the Linz Institute of Technology (LIT), which is headed by Sepp Hochreiter (inventor of the LSTM), intends to significantly expand its research areas and its personnel. The LIT AI Lab focuses on excellence in research and teaching. According to the call for Young Research Groups, funded by the State of Upper Austria as part of the STAR (Step Ahead Through Research) research initiative, we are looking for candidates with a strong, internationally recognized research profile. The successful applicant is expected to contribute to the Bachelor's and Master's degree programs of the JKU Linz as well as to the LIT Graduate School of Artificial Intelligence.

## 2. Research

The successful candidate has a strong expertise in **machine learning for artificial intelligence**. The candidate will design, develop and investigate machine learning methods towards the vision of a human-like general artificial intelligence. The focus area is **deep learning and neural networks** including generative adversarial networks (GANs), convolutional neural networks, reward based and reinforcement learning, stochastic approximation, and stochastic gradient descent methods. Additionally, the candidate should be able to demonstrate familiarity with technical and industrial applications of AI such as self-driving cars and industrial or autonomous robots and show a solid understanding of the related hardware and technical issues. In view of the vision of this position towards a human-like general AI, a demonstrable know-how in neuroscience is preferable.

The Application Guidelines for the Young Research Groups Programme provide the following research-related qualifications of the proposed group leader (1.7.3 of the Guidelines; <https://bit.ly/2WuFbPw>):

- Potential group leaders must have a doctoral degree and at least two years of research experience after finishing his/her doctorate. The doctoral degree may not have been gained more than eight years before the date of the submission deadline (30 April 2019).

This period may be extended for documented periods of raising children; military and civil service; relevant education and training in the field such as clinical training in medicine; and long, serious illnesses that have led to gaps in the group leader's career.

- The nominated group leaders must have research experience after finishing their doctoral degree at a different research institution than the applying research institution. In general, several years of work experience at a foreign research institution is required.
- The group leader's qualification to lead the research group must be shown by an exceptionally good international track record (high-calibre, peer-reviewed publications in top-ranking, international journals, monographs, internally generated patents, etc.). The following criteria are decisive for assessing the publication track record of the nominated group leader and initiating the review process:
  - Number and quality of the group leader's publications must be commensurate with his/her career stage and meet the high standards of the programme. The profiles of FWF START principal investigators (<https://pf.fwf.ac.at/en/research-in-practice/projectfinder>) or ERC Starting Grantees (<http://erc.europa.eu/projects-and-results/erc-fundedprojects>) can serve as a guide.
  - Peer review: All the publications listed (or more than half in the case of the humanities) must have been subject to a quality assurance procedure in line with high international standards, which usually means that journals should be listed in the Web of Science, Scopus, or the Directory of Open Access Journals (DOAJ). For journals not listed in those databases, or monographs, edited volumes or contributions therein, or other publication types, a link to the publisher's website describing the respective peer review procedure must be included in the publication list. Should no such description be available, it is the responsibility of the applying research institution to provide evidence that the publisher has conducted an appropriate quality assurance procedure on the publication.
  - International nature: In the natural sciences, life sciences, and social sciences, most of the publications listed must be in English. In the humanities and cultural studies, as

well as arts-based research, most of the publications must have a wider than national reach.

- The group leader's research independence must be evident from his/her curriculum vitae (hereinafter referred to as CV) and publication list (e.g., principal investigator of thirdparty funded projects, lead and last authorships, sole authorships, corresponding authorships).

### **3. Teaching**

The successful candidate should have teaching experience at Bachelor, Master or Doctoral level. The vast majority of courses at LIT in the respective areas are taught in English, therefore the candidate should be experienced in teaching both in German and in English, an international teaching experience is desired. The position includes teaching obligations in the study programs computer science, data science and artificial intelligence equivalent to four teaching hours per week (increased to eight hours per week after positive evaluation of the qualification agreement). The candidate should have experience in (co-)supervising academic theses.

### **4. Infrastructure**

For HPC tasks the MACH2 cluster (SGI Ultraviolet 3000 Shared Memory / 20 738 cores / 20 TB memory) is available.

For AI-related computing the LIT AI lab provides a GPU cluster with 70 TitanV GPUs and according storage.

### **5. Additional Requirements**

The successful candidate should have the following additional qualifications:

- Excellent command of spoken and written English
- Sufficient German language skills for undergraduate teaching and participation in university committee activities
- Great interest in collaborations within the LIT and the university as well as outstanding team-working abilities in order to cooperate with national and international research institutes
- Experience in the acquisition of industrial or scientific funding
- High social competence

The Application Guidelines for the Young Research Groups Programme state the following exclusion criteria for group leaders:

- Persons who at the time of submitting the application already have a position at the applying research institution that includes the prospect of permanent employment upon fulfilment of a

qualification agreement (e.g. tenure track position) or a permanent contract of employment in a research position cannot be nominated unless the employment contract is linked to third-party funding.

- Researchers also cannot be nominated who at the time of submitting the application already are or have been the principal investigator at the applying research institution as part of one of the following funding programmes: FWF START, ERC Grants. (Persons who received one of these grants in the past and carried out the respective project at a different research institution than the applying research institution can be nominated. However, the project concerned must have ended or will end before the Young Research Group project begins.)

## **6. Tenure (Qualification) Agreement**

Tenure decisions will be based on an agreement between the candidate and the Rectorate. Annual evaluations will include a review of excellence in research and teaching, international experiences, and the acquisition of external funding (according to § 99 Sec 5 and 6 of the Austrian University Act). Promotion to Full Professorship is possible in a simplified procedure (following § 99, Sec 4, Austrian University Act).