

## Research Assistants

Ecole/Institution/Société:

**TU BERLIN, Germany / Berlin**

Discipline:

**Machine Learning**

Type d'emploi::

**Full-time**

Date de publication:

**2022-03-12**

Personne à contacter:

**If you wish to apply for this position, please specify that you saw it on AKATECH.tech**

### **Research Assistants / PhD positions (f/m/d) in Machine Learning and Data Management**

The positions are part of the Graduate School of the 'Berlin Institute for the Foundations of Learning and Data' (BIFOLD).

BIFOLD conducts scalable agile fundamental research in the field of AI, primarily in the areas of data management (DM) and machine learning (ML). The research groups also address the new challenges and demands evoked by the rapidly growing importance of big data management and machine learning in virtually all domains, from medicine, industry, natural sciences, humanities, e-commerce and media, to government and societal affairs. 5 positions each are to be filled within the focus areas of DM (headed by Prof. Markl) and ML (headed by Prof. Müller).

#### **Working field:**

Based on the overarching research foci of BIFOLD, the Graduate School offers PhD projects in the areas of current challenges in AI, Data Science (DS) and distributed analysis of large amounts of data, with focus on DM, ML, and their intersection; including the development of novel theories, algorithms, and technologies, as well as prototypical systems and tools.

The topics within foundational research in DM and scalable data processing range from distributed DM to secure big data processing, knowledge management, semantic technologies, data programming languages and their compilation, in particular automatic parallelization, distribution, and hardware adaptation as well as the processing of data in the Internet of Things. In this context, the focus lies in the development of novel systems and technologies.

Topics within foundational research in ML include Bayesian inference, deep learning, reinforcement learning, and secure ML. Representative topics within the intersection of DM and ML include information integration, information visualization, and data cleansing,, in terms of both individual steps and the holistic examination of (data) modelling in iterative and exploratory processes of AI applications. Another relevant area is that of responsible AI, which aims to provide methods and technologies for AI applications to become understandable, reproducible, and compliant with ethical and legal frameworks.

Detailed descriptions of the current research projects of each group and the corresponding topics for PhD work can be found at <https://bifold.berlin/new-phd-research-topics/>.

The BIFOLD Graduate School warrants a comprehensive supervision of its students by leading international scientists in the field, embedded in the collaborative multidisciplinary environment of Berlin - the most innovative and vibrant scientific regions for AI, DM and ML.

The opportunity to prepare a PhD thesis is given.

## **Requirements:**

Successfully completed academic university degree (Bachelor, Master, Diploma or equivalent) in computer science ([e.g.](#), theoretical computer science, methodological-practical computer science, or technical computer science) or closely related fields of study with a focus on at least one BIFOLD core area ([e.g.](#), analytics, statistics, ML, DM systems and information management, data science, distributed systems, programming languages and compiler technology, high-performance computing); strong programming skills ([e.g.](#), C/C++, Java, Python, Scala), experience in either implementing big data systems ([e.g.](#), Apache Flink, Apache Spark) or database systems ([e.g.](#), Postgres) or knowledge of machine learning theories and methods ([e.g.](#) core methods, deep neural networks), practical experience in developing and applying ML algorithms, experience with linear algebra / neural network frameworks ([e.g.](#), NumPy, PyTorch, TensorFlow, JAX), and an excellent command of English and basic knowledge of German resp. or the willingness to learn German.

Please indicate in your application whether you have a general preference for ML, DM or the intersection of the two. We are looking for highly motivated, curious, enthusiastic, and results-oriented researchers with excellent academic records and strong research interest in the areas of DM and ML.

## **How to apply:**

Please send your application, quoting the reference number and including the usual documents (in particular, letter of motivation, latest CV, copies of your Bachelor's and Master's certificates, official copies of your academic transcripts, list of publications, and a minimum of 2 reference letters either as part of the application or sent directly to us by the closing date), preferably in English, by e-mail as one file in PDF format to Prof. Dr. Volker Markl and Prof. Dr. Klaus-Robert Müller, at [gsapplication@bifold.tu-berlin.de](mailto:gsapplication@bifold.tu-berlin.de)

or by post to: Technische Universität Berlin - The President - Faculty IV, Databases and Information Systems, Prof. Dr. Volker Markl, Sekr. EN 7, Einsteinufer 17, 10587 Berlin (for DM) or to Technische Universität Berlin - The President - Faculty IV, Machine Learning, Prof. Dr. Klaus-Robert Müller, Sekr. MAR 4-1, Marchstr. 23, 10587 Berlin (for ML).

## **Please send copies only. Original documents will not be returned.**

By submitting your application via email you consent to having your data electronically processed and saved. Please note that we do not provide a guaranty for the protection of your personal data when submitted as unprotected file. Please find our data protection notice acc. DSGVO (General Data Protection Regulation) at the TU staff department homepage: [https://www.abt2-t.tu-berlin.de/menue/themen\\_a\\_z/datenschutzerklaerung/](https://www.abt2-t.tu-berlin.de/menue/themen_a_z/datenschutzerklaerung/) or quick access 214041.

To ensure equal opportunities between women and men, applications by women with the required qualifications are explicitly desired. Qualified individuals with disabilities will be favored. The TU Berlin values the diversity of its members and is committed to the goals of equal opportunities.

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