

Vacancy Notice with the reference number 14/2018

The Otto-von-Guericke-University Magdeburg seeks to fill the following vacancy, in the frame of the DFG-funded **Collaborative Research Center SFB 1294 "Data Assimilation – The Seamless Integration of Data and Models"**, hosted at the University of Potsdam jointly with its partner Institutions HU Berlin, TU Berlin, Universität Magdeburg, WIAS Berlin and GFZ Potsdam.

Research Assistant (doctoral position)

Faculty of Mathematics, Institute of Mathematical Statistics

Salary Scale: 13 TV-L	Date commencing: 01.03.2018	Fixed term until 3 years	Contract status: 75 %
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Main responsibilities:

The successful candidate will work on Project A03: Sequential and adaptive learning under dependence and non-standard objective functions (PIs: Blanchard/Carpentier) of the SFB 1294 (see <http://www.uni-potsdam.de/sfb1294/>). This project is concerned with the problem of learning sequentially, adaptively and in partial information on an uncertain environment. In this setting, the learner collects sequentially and actively the data, which is not available before-hand in a batch form.

As a motivating example, consider the problem of sequential and active attention detection through an eye tracker. A human user is looking at a screen, and the objective of an automatized monitor (learner) is to identify through an eye tracker zones of this screen where the user is not paying sufficient attention. In order to do so, the monitor is allowed to flash a small zone in the screen, e.g. light a pixel (action), and the eye tracker detects through the eye movement if the user has observed this flash. Ideally the monitor should focus on these difficult zones and flash more often there (i.e. choose more often specific actions corresponding to less identified zones). Therefore, sequential and adaptive learning methods are expected to improve the performances of the monitor.

The PhD candidate will focus on developing sequential learning algorithms with mathematical guarantees for learning on given non-stationary processes that are relevant in the context of recommendation systems, and on implementation of the algorithms that will be developed. S/He will also work on the eye tracker based application of the project. A degree in machine learning or in mathematics with an interest in theoretical computer science will be preferred.

The successful applicant will be given the possibility to obtain a doctoral degree in Mathematical Stochastics. The position is in the group of Prof. Dr. Alexandra Carpentier.

Application requirements:

Applicants need to have a Diploma/Master degree in Mathematics, Statistics, or Theoretical Computer Science and a good knowledge in either Mathematical Statistics or Machine Learning, are required.

Applications from disabled persons will be given priority in the case of equal suitability, ability and professional expertise. The Otto von Guericke University aims to increase the proportion of women researchers within the university and specifically encourages women to apply.



Please send your application along with the standard documents (curriculum vitae, photocopies of certificates, a list of publications if relevant, references and a cover letter) under **Reference number 14/2018** until the **January 24th, 2018** at the address:

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