



PhD Program between the Freie Universität Berlin (FUB) and the China Scholarship Council (CSC)

Open PhD position at FUB for CSC scholarship candidates 2018

Please note: the PhD position is only offered to Chinese PhD candidates for application in the framework of the FUB-CSC PhD Program.

<u>Department/Institute:</u>	Department of Veterinary Medicine / Institute for Veterinary Epidemiology and Biostatistics
<u>Subject area:</u>	Biostatistics, Statistics, Mathematics, Physics, Computer Science, Bioinformatics, Data Science
<u>Name of Supervisor:</u>	Prof. Dr. Vitaly Belik
<u>Number of open PhD positions:</u>	2
<u>Type of the PhD Study:</u>	Full-time or Sandwich-Model
<u>Project title:</u>	Data-driven research on complex systems

PhD Project description:

In the group of Prof. Vitaly Belik PhD projects are available in the field of data-driven research of complex systems with a particular focus on spreading processes in epidemiological and social applications.

There are two possible directions for PhD projects.

- 1) Data-driven statistical and computational modelling, especially under application of machine learning methods, of specific pathogens and organismal phenomena aimed at understanding their function and possibilities of control. E.g. analysis of genomic (metabiome) data, host-pathogen/parasite population dynamics, hormonal dynamics in animals, automated diagnostics of animal health conditions (using various sensors and video surveillance).
- 2) The study of the empirical data on complex systems in the variety of applications connected to spreading processes in a broad sense. These includes analysis and simulation of animal trade and human hospital referral networks in the context of pathogen and antibiotic resistance spread, as well as information propagation in social media.

Language requirements:

IELTS 6.5 or TOEFL 95 ibt.

Academic requirements:

Potential candidates should hold an MS-degree in physics, mathematics, bio/statistics, bioinformatics, data science, computer science or similar. The ideal candidates should have strong mathematical and computational background or be eager to acquire it, in the following fields: machine learning, statistical analysis, complex networks science, nonlinear dynamics, and stochastic processes. Practical experience with programming, preferentially in at least one scripting language such as Python or similar and one high-performance language such as C/C++ or similar are required. The experience with Matlab, Mathematica, and R as well as with some of the machine learning frameworks (e.g. scikit-learn, TensorFlow, Theano, Keras) is welcome. The ability to be a good team player, to conduct scientific research, be passionate about data analysis, and strong proficiency in English is required.

Information of the professor or research group leader:

http://www.vetmed.fu-berlin.de/einrichtungen/institute/we16/das_institut/mitarbeiter/belik-vitaly/index.html

Please note: In a first step, the complete application must be submitted to the Beijing Office for evaluation by January 4th, 2018. Please do not contact the professor before. He/She will get in contact with you after having received the complete application via the Beijing Office in January.