Junior research positions in machine learning at BCAM, Bilbao, Basque Country - Spain

The Basque Center for Applied Mathematics (BCAM) is offering several positions for young researchers to work on machine learning problems. This is an opportunity for MS and last year BS students to start a research career while learning very interesting topics. The offers include internships, PhD student, and research technician positions. Candidates are expected to have strong mathematical background with experience on software languages for numerical computing such as Matlab and Python.

You can find below the description of the positions. Further informations are available at the links http://www.bcamath.org/en/research/internships and http://www.bcamath.org/en/research/job

_____
_____

Internship 1

Research topic title: Multidimensional supervised regression with applications in Physics

Most of machine learning methods developed for supervised regression assume the output is a scalar. In numerous applications, the output of interest is a multidimensional quantiy. For instance, in Physics, outputs of interest are usually tensors. This project will develop and implement techniques for multidimensional regression utilizing kernel methods. In addition, the techniques developed will be tested using datasets obtained in numerical Physics.

Keywords: machine learning, statistics, reproducing kernel Hilbert spaces, Matlab/Python
_____
_____
Internship 2:

Research topic title: Machine learning for very short-term load forecasting

Conventional techniques for load forecasting predict energy consumptions for next several hours while multiple energy management tasks require predictions

for next minutes. This project will develop and implement machine learning techniques for very short-term load forecasting that provide predictions for next minutes. In addition, such techniques will be based on probabilistic online learning that provides uncertainty assessments and adapts to patterns' changes

Keywords: machine learning, statistics, load forecasting, Matlab/Python

———————————————————————————————————
—————————————————————————————————

Internship 3:

Research topic title: Minimax supervised classification under covariate shift

Supervised classification can be approached as a zero sum game between learner and nature. In the standard scenario examples at training are similar to those at prediction while in practical scenarios the example types change. This project will develop supervised classification techniques based on game theory for scenarios where examples are affected by covariate shift.

_____

_____

Internship 4:

Research topic title: Machine learning techniques for emerging 5G networks

Methods developed in machine learning and artificial intelligence fields are currently being used in multiple engineering tasks. One such applications is communication networks and specifically 5G networks. This project will develop machine learning techniques that utilize data obtained in a 5G network to obtain predictors of variables such as quality of service based on controlled features for the management of 5G networks.