

Thesis project: Anomaly detection with Microsoft Azure

Thesis description: This master thesis project is about detecting anomalies in time series data with Microsoft Azure or more precisely with one of its services, called Microsoft Azure Machine Learning (Azure ML). In the Microsoft DataMarket (something like App Store or Google Play) there is already an Anomaly Detection API built with Azure ML that can detect different types of anomalies in time series, such as: spikes, dips, level changes, trends, and other important changes using various anomaly detection methods (detectors). In this thesis project, the student is expected to embrace the Azure ML and the available Anomaly Detection API in order to first evaluate and then based on obtained results to refine or develop few other anomaly detection methods. Some of the tasks in the project are to:

- understand the problem area (anomaly detection), Azure ML, and a bit the related research work
- evaluate the methods within the Anomaly Detection API on different labelled and unlabelled datasets and report results
- refine or develop few other anomaly detection methods for the Anomaly Detection API or (bonus task) develop your own novel Anomaly Detection API that can be later provided over the Microsoft DataMarket
- willingness to collaborate with other researchers from SICS Swedish ICT that presently through some collaborative research and innovation projects are supporting the Swedish process and automation industry to address similar challenges

Competence: We are looking for a proactive MSc students that is curious, goal-oriented, quality-driven and is looking to work on something that matters for its future prospects and overall the society. In order to successfully complete this project, good programming skills are essential and general interest in data analytics and machine learning are beneficial.

Application: Applications should include a short CV (max 2 pages), one-page cover letter, and complete transcript of records. In the cover letter, please mention previous activities or projects that you consider relevant for the thesis project. Application shall be send as soon as possible to Blerim Emruli, Senior Researcher, blerim@sics.se or Kristian Sandström, Adjunct Professor, kristian.sandstrom@sics.se.

Location: SICS Swedish ICT, Västerås

SICS Swedish ICT AB: SICS Swedish ICT Västerås is a research institute with the aim to strengthen the innovation system in the Mälardalen region by offering applied research to both private and public organizations. Our core values are to be open-minded, value-driven, research-oriented, and to have fun! SICS Swedish ICT Västerås is a part of RISE (Research Institutes of Sweden) that today includes 16 institutes. The RISE institutes SP, Swedish ICT and Innventia are merging in order to create a unified institute sector and become a stronger innovation partner for businesses and society. At the end of the year we will change our name to RISE. Read more at www.ri.se/en