Master's thesis proposal – 30hp

**Smart Manufacturing – Machine learning to detect anomalies in network data**

**About Project Smarta Fabriker:** Digitalization and its connection to sustainable production is identified as a key enabler for increasing the number of jobs in Swedish industry. The purpose of Project Smarta Fabriker is to increase the attractiveness of technology and careers in industrial companies, and to spread knowledge about industrial digitalization. During the spring of 2017 a state-of-the-art demonstrator of a smart factory was developed by 80 students in collaboration with over 50 companies. The demonstrator is currently used for training students as well as employees of industrial companies. For 2018 this demonstrator is to be further developed implementing a variety of digital manufacturing concepts where Smart manufacturing – Machine learning to detect anomalies in network data is one of the central themes. To learn more about the project and previous theses, visit [www.smartafabriker.se](http://www.smartafabriker.se) (in Swedish).

**Smart Manufacturing – Machine learning to detect anomalies in network data** is a project to evaluate how machine learning can be used to detect when a radio network is not behaving as it should. This is connected to smart manufacturing in that many factories are looking into how to replace their wired network with a radio network. Work has started on this, looking at data from the network nodes, indoor location systems and device data.

**Tasks**

- Evaluate, enhance and test the work that has been done in this field at Ericsson.
- Enhance the solution with data from the network nodes.
- Look into things like trends, unsupervised self learning to be able to do predictive maintenance of the network and give relevant alerts to the operations in the factory.

**Means and location**

This thesis is performed in collaboration with Ericsson AB which will provide industrial support and supervision. Thesis students will have access to workplaces at Ericsson AB, Lindholmspiren 11, Gothenburg.

**Conduction and requirements**

This thesis work needs to be conducted by two students where at least one should be fluent in Swedish. Preferably, we are looking for students with background in machine learning, statistical analysis and related areas. The time period is January to May 2019.

**Contact**

For questions concerning Project Smarta Fabriker contact Johannes Persson, 0708 58 19 13, [johannes.persson@gtc.com](mailto:johannes.persson@gtc.com). For specific questions concerning the topic of the thesis, contact Fredrik Hultkrantz, 0725 74 64 70, fredrik.hultkrantz@ericsson.com, at Ericsson AB.

Interviews are held continuously. To apply, send your CV and a cover letter to fredrik.hultkrantz@ericsson.com as soon as possible, but no later than November 30th, 2018.