Master Thesis - Optimization of Machine Learning Models

Background
Mobile networks are used all over the world and are the cornerstone for the networked society, where everything shall be connected. To support the vast amount and diversity of data expected in future networks, Ericsson are developing products to drive and support the networked society. The subjects for Master Thesis are defined to investigate and develop algorithms, architecture, tools etc. to support huge increase of speech, data and massive IoT for Radio Access Networks.

Thesis Description
When using machine learning in resource constrained embedded systems a need arises to optimize the machine learning models, e.g. with respect to the memory used by the models, the CPU usage when training and predicting.

The thesis work is proposed to cover:

- Explore methods to optimize machine learning models, considering that the optimization step also will be performed in the embedded system itself and thus needs to be optimized and will be resource constrained.
- Investigate how these optimization methods can be implemented and deployed in a resource constrained embedded system, e.g. considering implementation language and dependencies to possible third-party components, e.g. existing open source libraries.

The thesis will be concluded with a result presentation for the Ericsson team.

Qualifications
This project aims at students in electrical engineering, computer science, computer engineering or similar.

Extent
1-2 students, 30hp each

Location
Ericsson AB Mjärdevi, Linköping

Preferred Starting Date
Spring 2020

Contact Persons
Christer Lindell
christer.lindell@ericsson.com