Master Thesis – Machine Learning Acceleration using Ericsson 5G DSPs

**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**
Ericsson develops propriety ASICS containing DSPs and domain specific accelerators that are used in the 5G Radio Network products, Ericsson Multi Core Architecture (EMCA). Currently these ASICS are accessed using proprietary frameworks. Ericsson is working towards adopting open standards and frameworks.

In the Radio Networks products there are also general purpose CPUs running different 5G Radio Network applications. The purpose with this thesis is to investigate the possibility to use EMCA as an accelerator for machine learning applications.

**Task**
- Investigate how to use EMCA as accelerator for machine learning applications running on general purpose CPU. Use an existing Machine Learning framework, for example TensorFlow (https://www.tensorflow.org/).

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 2019

**Contact Persons**
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