MASTER THESIS – USING ERICSSON DSPS AS APPLICATION ACCELERATOR

Background
Mobile networks are used all over the world and are the cornerstone in the networked society, where everything that benefits from a connection 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 5G radio base stations include both general purpose processors and Ericsson’s own developed DSPs for signal processing, called Ericsson Multi Core Architecture (EMCA). These DSP run high performance real time signal processing algorithms for data plane scheduling and traffic optimization in the radio network traffic.

The purpose of this thesis is to investigate the possibility to use EMCA as accelerator for applications running on the general-purpose CPUs. There are several possibilities and aspects that can be included in the thesis work.

- Machine Learning acceleration (for example tensor flow).
- User data Packet Processing acceleration.

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. Interest in signal processing is a merit.

Extent
1-2 students, 30hp each

Location
Ericsson AB Mjärdevi, Linköping

Preferred Starting Date
Spring 2018

Keywords
C, Optimization, Data Algorithms, 5G

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