

Master's thesis

Hardware Accelerator Design for Conditional Random Fields

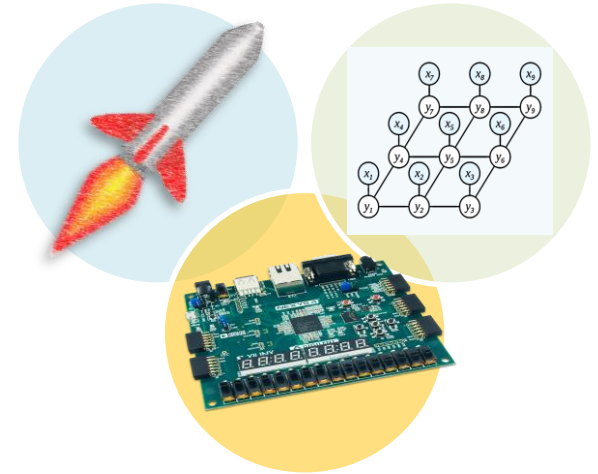
Conditional random fields (CRFs) are a class of machine learning models generally used as a sequential labeling method for data. CRFs can achieve a high performance on a variety of applications such as speech processing, natural language processing, text mining, and image recognition. Therefore, developing hardware accelerators for CRFs is an interesting problem in the computer architecture domain. In this thesis you will investigate an efficient implementation of CRFs on reconfigurable hardware, which is followed by its performance analysis.

Type of project

- Understanding the CRF algorithms
- Investigate architectures for accelerating CRFs
- Implement an accelerator on a reconfigurable platform

Prerequisites

- C++ or Python programming skills
- Basic knowledge of machine learning concepts
- Experience with FPGA synthesis flows and Xilinx tools



Supervisor

Dr. Hassan G. Mohammadi, O3 134

hgm@mail.upb.de

