

Master's Thesis

RadioML Demonstrator on an RFSoc Platform

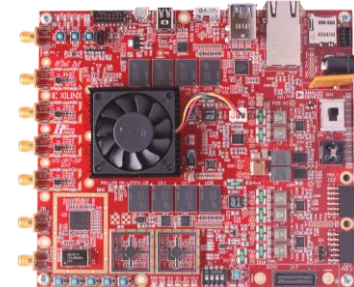
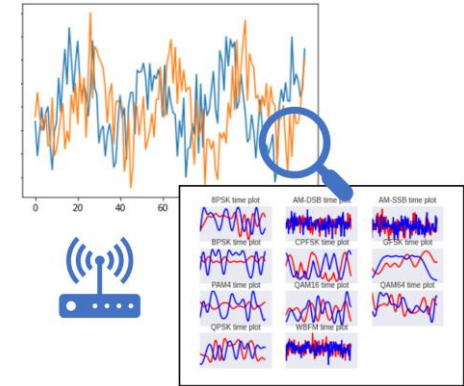
In the “RadioML” domain, deep neural networks replace traditional algorithms for radio signal processing. To meet real-time demands, we rely on custom FPGA accelerators for these neural networks. The goal of this thesis is to build an interactive demonstrator of this technology for a modulation classification use case. The demonstrator will be based on a Xilinx RFSoc platform that integrates radio transceivers and FPGA. Operation involves the generation of test signals with various modulation schemes, which are then transmitted over a real or simulated channel and processed by a DNN accelerator on the receiving end.

Type of project

- Extending a basic end-to-end communication system using the Simulink tool
- Conducting experiments and visualizing results in a Jupyter environment

Prerequisites

- Knowledge about signal theory & communication systems, programming skills (Python)
- Experience with Matlab, Simulink, and Xilinx tools is helpful



Supervisor

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