



PCIe on FPGA

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Motivation

PCI Express (PCIe) is the standard high-speed interface for communication between FPGAs and host systems. This project aims at:

1. Exploring PCIe IP cores available for FPGA platforms.
2. Implementing a C library to simplify PCIe usage from the host side.
3. Performing bandwidth and latency measurements with different PCIe configurations.
4. Providing a reusable framework for future FPGA-host communication projects.

Goals and Tasks

-  Understand PCIe protocol basics and FPGA IP core integration.
-  Set up PCIe IP core on an FPGA board and establish communication with the host.
-  Develop a C library for easy PCIe access from user applications.
-  Perform and document experimental bandwidth/latency benchmarks under different setups.

Literature

Courses & Deliverables

-  **Introduction to Scientific Working**
Short report on background
Short presentation
-  **Bachelor Project**
Project code and documentation
-  **Bachelor's Thesis**
Project code
Thesis
Final presentation

Recommended if you're studying

-  CS  ICE  SEM

Prerequisites

- > Strong interest in hardware design and system integration

Advisor Contact

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