Bachelor thesis, research internship, or advanced seminar

Design and implementation of optical interface
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About us
One of our main areas of research is the application of modern control theory to the field of power electronics and electrical drives. To be able to implement our control strategies rapidly, we want to develop a powerful control platform based on a Xilinx Zynq System-on-Chip (SoC). To interface the control platform with the inverter an optical interface needs to be designed and implemented. The motivation to choose an optical interface, is its immunity to electromagnetic noise emitted by the electrical drive and the hard-switching inverter, allowing a more reliable connection.

Your tasks
• Defining requirements of the connection
• Getting familiar with available interfaces on the control board and the inverter
• PCB design of digital to optical connection board (with Altium or similar)
• Implementation and testing of the board
• Write a report in Latex or Word and give an oral presentation
• Implementing the interface on the FPGA in VHDL (as an additional task that could be included)

Your profile
• Student in electrical engineering, mechanical engineering, math, informatics or related
• Experience in hardware design is a plus but not required
• Fluent in German or English

Contact
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