FPGA Serial Channels: Visual Editor and Code Generator (BSc, MSc, SHK/WHK)

• **Motivation**
  – FPGA boards on Noctua offer 4 point-to-point connections to other FPGA boards
  – Topologies of these connections are fully configurable with each job allocation
  – Required notation to configure custom connections can be generated with FPGA-Link GUI tool [1]

• **Tasks**
  – Implement export functionality to generate code from custom configuration
    ▪ OpenCL for FPGAs
    ▪ MPI for CPU hosts
  – Extend existing visual editor with more features

• **Recommended skills**
  – Good programming skills
  – Desirable: good general understanding of programming languages and code compilation/generation

• **Contact**
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[1] https://homepages.uni-paderborn.de/deffel/fpgalink-gui/