Internship - Master Thesis Work on

Hardware Accelerated Databases

At Swarm64, parallel processor experts and database software specialists teamed up to create a full-stack software and hardware accelerator for databases. Swarm64-DB and Swarm64 Scalable Data Accelerator plug into Linux-based servers and deliver their performance without need of changes to the customer's application.

Carrying out your Master Thesis at Swarm64

At Swarm64 you will get the opportunity to work with a highly skilled, educated and ambitious team. Team members have educational backgrounds from Electrical and Electronics Engineering as well as Computer Science. This gets topped with hands-on experience on FPGA Design, Linux Device Drivers, Computer Software and Database Systems. You will work with the team throughout your thesis work, share, teach and learn. You will get all the guidance and help you need to carry out a successful Master Thesis.

Master Thesis Work Topics

Swarm64 is looking for Master Thesis students in the field of Hardware Acceleration for Database Systems. We are using a highly parallel processor designed for FPGAs', with numerous peripherals to achieve cutting edge performance for databases. The processor, running on a modern Altera FPGA utilizes a number of high bandwidth interfaces to achieve that. Some of the peripherals include DDR3, PCIe Gen3.0, SATA SSD Gen3.0.
Parallel applications are developed using OpenCL, and work items are scheduled through a well-defined API and a high performance Linux device driver.

We are currently looking for Master Thesis Students to create new possibilities in our Hardware accelerated Database System with research in the following fields:
1. FPGA accelerated high end storage solutions (NVMe, SSD)
2. Scheduling and resource allocation for parallel architectures
3. Compression and encryption
4. Load and access pattern prediction
5. Reconfigurable architectures
6. Distributed computing & clustering
7. Processor architecture

Interested students will get the opportunity to shape their exact thesis subject together with our team. Therefore, it is highly recommended to proceed the thesis with a 2-3-month internship.

Duration

Duration of the thesis is 6 months, or as instructed from academic institutions.

Requirements

Candidates are expected to hold a Bachelor or equivalent degree in Computer Science or Electrical Engineering and to be comfortable using the English language. Reflecting you self in some of the following points ensures you as a suitable candidate:

1. Digital Design with Verilog, SystemVerilog, VHDL
2. Keen interest in Computer Parallel Architectures
3. Hardware & Software Performance Optimization
4. Parallel Software Development with C++, OpenCL

How to apply

Send us your CV to jobs@swarm64.com, transcript of records and a few words about yourself and what you are interested in. We will then contact you for a discussion about your Thesis work.