



Are you an electronics engineer with experience in PCB design and FPGA programming and considering to work with the Italian Institute for Nuclear Physics (INFN) to design next-generation particle physics detectors?

We are recruiting an electronics engineer to work in PCB design and FPGA programming for a large scale heterogeneous computing systems for online trigger selection in the ATLAS experiment at CERN. The main project for this job will be the [Hardware Track Trigger \(ATLAS TDAQ phase-II TDR\)](#).

You have a degree in electronics engineering or equivalent work experience.

You match the skills and expertise detailed in the job descriptions.

You are self-motivated, can work by objective and work effectively in collaboration.

The work location is Pisa (Italy) with the possibility of travel periods at CERN near Geneva (Switzerland).

The appointment is initially for two years with an INFN postdoc (assegno di ricerca).

#### **Your responsibilities and duties will include**

- Collaborate on the specifications and design of a PCB with the last generation FPGAs
- Prepare the characterization and test of the PCB prototypes
- Write the specification of new VHDL logic blocks
- Design and validation of VHDL logic for Field Programmable Gate Arrays (FPGA)
- Integration and commissioning of the above logic in the Fast Tracker and/or Hardware Track Trigger system
- Debugging, evaluation and consolidation of faults and problems in trigger electronics under commissioning
- Identify and recommend system improvements to reach high technical performance
- Working with international teams of researchers, engineers, technicians, and students

#### **Skills and Experience required**

- Degree in electronics engineering, or in a related field, or on the field experience at an equivalent level
- Experience on PCB design (preference for Altium software)
- Experience on laboratory tests and characterization of PCB also with multi-gigabit lines
- Experience working with FPGAs
- Past experience in VHDL coding and validation
- Experience in problem solving and debugging in general and for FPGA logic
- Hands-on approach with strong sense of task ownership and responsibility
- Familiarity with best industry practices, technical procedures, and good documentation.

#### **Desirable skills**

- Experience with C++, Python, shell scripting and Linux systems

The official INFN call is available at this link: [http://www.ac.infn.it/job/dettagli\\_job.php?id=2633](http://www.ac.infn.it/job/dettagli_job.php?id=2633)

**The deadline is Dec 22nd, 2019.** For an informal translation to English or further information please contact:

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