



IAESTE

INTERNSHIP OFFER

DE-2026-2079-4



Karlsruhe, Germany,
Germany



ON-SITE

INTERNSHIP HOST



Name of Company
Karlsruhe Institute of Technology
Karlsruhe School of Elementary
and Astroparticle Physics (KSETA)



Website
www.kseta.kit.edu



Address of Company
Karlsruhe
Germany



Number of Employees
9000



Business or Product
Higher Education and Research

STUDENT REQUIRED



General Discipline
Computer Science /
Informatics, Electrical
Engineering, Physics and
Physical Sciences

Field of Study

Computer and Information
Research; Experimental Physics / Applied
Physics

Completed Years of Study

3

Language Required

English Excellent (C1, C2)

Required Qualifications and Skills

Teamwork | Software Development |

Creativity | Computer Programming

Bachelor degree in physics, electrical
engineering or informatics

You are enrolled in a Master's
programme in electrical engineering or
informatics.

Student Status Requirements
required during the whole period of
internship

Other Requirements/Information

INTERNSHIP OFFER



9 - 12
weeks



992 EUR
per Month



500 EUR
per Month

Latest Possible Start Date

01-Jun-2026

Within Months

May-2026 - Aug-2026

Company Closed Within

Deductions Expected
variable

Payment Method
Bank Transfer

Arranged by
IAESTE

Estimated Cost of Living including Lodging
992 EUR / Month

Working Environment: Research and development

Working Hours / Week: 40.0

Development of components for high-performance data acquisition systems

To advance the development in research fields such as high-energy physics and photon sciences, cutting-edge instrumentation, especially for particle detection, is essential to keep up with the high demands of these experiments. In our group at KIT, we are focusing on the development of ultra-fast, high resolution detectors systems based on System-on-Chips (SoCs) for various physics applications. These systems are designed to handle high data-throughput at high data rates, meeting the demanding requirements of modern experiments.

You will have the opportunity to explore various aspects of detector system development, including PCB design (Altium/KiCAD/PADS), FPGA firmware development (Vivado), embedded software design (embedded Linux), GUI design and system integration and testing in the context of physics experiments and applications beyond.

Depending on your background and interests, your work may contribute to different ongoing projects, such as:

* Integration of multiple ultra-fast detectors, involving the design of interface PCBs, adaptation of FPGA firmware and software, and preparation for integration at experimental facilities.

* Development of flexible, high-performance data acquisition (DAQ) systems, intended as a common platform for various physics experiments. This includes custom PCB design, firmware and software implementation for data processing and analysis, and integration into detector readout systems.

If other topics spark your interest during your stay, we are happy to adjust your tasks accordingly.

Contact:

Olena Manzhura, olena.manzhura@kit.edu

Nour Sharif, nour.sharif@partner.kit.edu

ADDITIONAL INFORMATION

Deadline for Nomination - 25-Jan-2026

Development of High-Performance Detector Systems Based on System-on-Chip Technologies

KSETA Internship 2026

To advance the development in research fields such as **high-energy physics and photon sciences**, cutting-edge instrumentation, especially for particle detection, is essential to keep up with the high demands of these experiments. In our group at KIT, we are focusing on the development of ultra-fast, high resolution detectors systems based on **System-on-Chips** (SoCs) for various physics applications. These systems are designed to handle **high data-throughput** at **high data rates**, meeting the demanding requirements of modern experiments.



You will have the opportunity to explore multiple aspects of detector system development, including PCB design (Altium/PADS), FPGA firmware development (Vivado), embedded software (embedded Linux), GUI design, as well as system integration and testing in the context of physics experiments and broader applications.

Depending on your background and interests, your work may contribute to ongoing projects such as:

Integration of multiple ultra-fast detectors: This involves designing interface PCBs, adapting FPGA firmware and software, and preparing systems for integration at experimental facilities.

Development of flexible, high-performance data acquisition (DAQ) systems: These systems serve as common platforms for various physics experiments, covering custom PCB design, firmware and software implementation for data processing and analysis, and integration into detector readout systems.

If other topics capture your interest during your stay, we are happy to adjust your tasks accordingly.

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