TOMMASO ISIDORI

Experimental Physicist & Data Acquisition Engineer

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EXPERIENCE

Postdoctoral Researcher

CERN, ALICE Experiment

2021 – Present CERN, Geneva (CH)

- Coordinate test campaigns, managing hardware, data collection, and analysis across international teams.
- Develop and maintain DAQ, readout, and control systems (C++, Python, Bash) and embedded monitoring tools.
- Support system operations, overseeing software, DAQ configuration, and on-call team training.
- Lead R&D on fast timing detectors, developing DAQ and signal analysis frameworks and mentoring students.

Ph.D. Researcher

University of Kansas (KU)

2017 – 2022 Lawrence, KS, U.S.A.

- Designed and characterized silicon detectors and front-end electronics for space, medical, and HEP applications.
- Led test beams and lab setups for fast silicon detector characterization at CERN and NASA.
- Conducted high-intensity radiotherapy detector studies, achieving single-particle resolution for dosimetry.

Internship at INFN Pisa

Universita degli studi di Pisa

2016 – 2017 CERN, Geneva (CH)

- Designed, tested, and integrated high-speed solid-state sensors and electronics under high-radiation conditions.
- Led validation campaigns, developing DAQ software and performing system installation, calibration, and optimization.

Summer student at the TOTEM experiment

Universita degli studi di Siena

2013 CERN, Geneva (CH)

- Developed and tested gas-based detectors, performing lab measurements and system characterization.
- Designed feedback systems for low-current monitoring, collaborating with electronics engineers on signal reliability.

ROLES AND AWARDS

Prototype performance coordinator of the ALICE FoCal project
2021 – current

Technical Coordinator and System Run Coordinator of the ALICE EMCal experiment
2024 – 2025

Responsible of laboratories at CERN
2021 – current

Awardee of the KU Graduate Fellowship Based on Exceptional Qualifications
2017 – 2018

STRENGTHS

Hard-working | Team work | Embedded Systems | Sensors & Detectors | Statistical Analysis | Coordination & Management

EDUCATION

Ph.D. in Physics

The University of Kansas (KU), Lawrence, Kansas, U.S.

2017 - 2022

Thesis title: *New Generation Fast Silicon Detectors for Timing and Particle Identification: High Energy Physics and Applications*

M.Sc. in Physics, Fundamental Interaction

Universitá degli studi di Pisa, Pisa, Italy

2014 - 2017

Thesis Title: *Diamond Detectors for Proton Time of Flight in CT-PPS and TOTEM Experiments*

B.Sc. in Physics

Universitá degli studi di Siena, Siena, Italy

2010 - 2014

Thesis Title: *Characterization and Optimization of Gas Detectors*

PROJECTS

ALICE FoCal
The University of Kansas

2021 – current

In charge of the test setup and test coordination of a calorimeter particle detector approved for installation inside the ALICE Experiment, at CERN.

Fast detectors for future particle colliders
Department of Energy (DOE)

2018 – 2021

Development, test, and data analysis of silicon and diamond-based detectors for high rate beam monitoring.

ALICE ElectroMagnetic Calorimeter (EMCal)
Department of Energy (DOE)

Led and coordinated technical operations for a complex detector system, overseeing control software, data acquisition, system maintenance, and training of on-call personnel to ensure smooth operation.

NASA AGILE experiment
National Science Foundation (NSF)

2018 - 2021

Developed and tested a compact multi-layer silicon tracker for space, including sensors, instrumentation, DAQ software, and stability validation with custom readout electronics.

Compact Muon Solenoid (CMS) Experiment Timing Layer
Department of Energy (DOE)

2019 - 2022

Led testing and characterization of silicon timing sensors at KU, setting up lab infrastructure, automating measurements, and delivering performance data from beam tests.

Medical Physics
The University of Kansas

2017 – 2021

Developed silicon detectors for high-rate medical beam measurements, including hardware setup, data acquisition, analysis automation, and publishing first single-particle resolution results.

LANGUAGES

English ●●●●●

Italian ●●●●●

French ●●●○○

REFERENCES

Prof. Ian G. Bearden
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PUBLICATIONS

Journal Articles
the list can be found here

International Conferences
the list of international conferences I attended can be found here

SOFT SKILLS & OTHER INTERESTS

- **Teamwork:** Collaborate across multiple teams, chair meetings, coordinate large international groups, and mentor students.
- **Working under pressure:** Manage multiple testing and coordination activities while maintaining clear communication and effective collaboration.
- **Music studies:** Over 15 years of guitar study and performance.
- **Martial Arts:** 30 years of experience in martial arts; Judo and Grappling instructor, and president of the CERN Martial Arts Club.