

Nikitas Loukas

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Education & Research Experience

- **Ph.D. in CMS L1 Trigger upgrade [Oct 2010 - Dec 2016 (expected to finish)] University of Ioannina. Greece.**
 - **CMS Collaboration member:** Jan 2012 - present.
 - **Based at CERN:** Mar 2013 - present.
 - **Thesis title:** CMS L1 Trigger Upgrade - The Barrel Muon Track Finder.
 - **Thesis main achievements:** Development of the Barrel Muon Track Finder (BMTF) firmware and installation of the system in CMS. [Conference:C15-09-28, JINST11(2016):no.03,C03038].
 - **Firmware developing:** Design and optimise the BMTF firmware written in VHDL. Improve the design in order to meet the latency budget and the BMTF requirements. Develop firmware for 3 data concentrator systems for the L1 Trigger upgrade by making and porting modular VHDL blocks.
 - **Commissioning:** Setup and administrate uTCA crate at CERN side, used as testbench of several sub-systems of CMS L1trigger. Install the uTCA crates of BMTF system at CMS underground. Establish 380 BMTF I/O fiber connections and validate. Commissioning the BMTF and debug the firmware to eliminate data/emulator output discrepancies.
 - **Graduate Physics courses:** Spent the first year following 5 graduate physics courses.
- **M.Sc. in Modern Electronic Technologies [Oct 2006 - Dec 2009] University of Ioannina. Greece.**
 - **Grade:** 9.1/10 (13 courses in electronic engineering and a thesis)
 - **Physics courses:** Spent the first year following 4 undergraduate physics courses.
 - **Thesis:** Development of Sensors Microcontroller Interface for Wireless Communication System
 - **Developing and Deploying:** Programing the Atmel microcontroller in C language. Design the schematics and the PCB of the system. Install the environmental automated system on site
- **B.Sc. Electrical Engineering [Feb 2001 - Jun 2006] University of applied sciences of Thessaly, Greece.**

Publications & Workshops & Conferences

1. **TDR 2013:** CMS collaboration, Technical Report CERN-LHCC-2013-011. CMS-TDR-12, CERN, Geneva, Jun 2013. My contribution was the Barrel Muon Track Finder firmware.
2. **TWEPP 2015:** Poster presentation in the Topical Workshop on Electronics for Particle Physics. Title: The CMS Level-1 Trigger Barrel Track Finder. **Main Author** on behalf of BMTF collaboration. journal:JINST. DOI: 10.1088/1748-0221/11/03/C03038.
3. **VCI 2016:** Poster presentation in Vienna Conference on Instrumentation. Title: Upgrade of the CMS muon trigger system in the barrel region. journal: Nuclear Instruments and Methods in Physics Research. DOI: <http://dx.doi.org/10.1016/j.nima.2016.05.071>.
4. **TWEPP 2016:** Poster presentation in the Topical Workshop on Electronics for Particle Physics. Title: The CMS Barrel Muon Trigger Upgrade. Muon Barrel collaboration. To be published.

International Schools & Seminars & Research Experiences

- **XILINX SD-SoC seminar:** SD-SoC Technical seminar. Paris. France. 8 Mar 2016.
- **ERASMUS at CERN:** Working in the back-end group for the Trigger, Control and Distribution System (TCDS) upgrade. CERN. 1Mar - 31 Jul 2013.
- **CERN ISOTDAQ 2013:** The international school of trigger and data acquisition. Aristotle University of Thessaloniki. Greece. 1-8 Feb 2013. Poster presenter.
- **Demokritos Summer School:** Orientation and Information on the latest developments in research and technology, National Center for Scientific Research. Athens. Greece. 7-18 2008.

Professional Skills

English Comprehension ●●●●○ Assembly, C ●●●●○ \LaTeX , Linux ●●●●○ VHDL, Verilog ●●●●●
Writing ●●●○○ Python, C++ ●●●○○ MAC os ●●●○○ Altium, OrCAD ●●●○○
Speaking ●●●○○ Tcl, Bash script ●●●○○ Windows ●●●○○ LabVIEW ●●○○○

Teaching & Mentoring

2014 - present: Supervisor of graduates of the same team (CMS-Ioannina) students.
2011 - 12 Lab instructor, "Programing in C" for 1st year undergraduates of Physics Dept. Univ. of Ioannina.
2010 - 11 Lab instructor, "Digital electronics" for 1st year undergraduates of Department of Computer Engineering. Technological Educational Institute of Epirus.
2010 - 11 Lab instructor, "Analog electronics" for 1st year undergraduates of Department of Computer Engineering. Technological Educational Institute of Epirus.
2007 - 08 Lab instructor, "Digital electronics" for 3st year undergraduates of Physics Dept. Univ. of Ioannina.

Non academic experience and Hobbies

2009 - 10: Military service (compulsory).
2001 - 02: Volunteer services at NGO "ARCTUROS" in a environmental protection program in the forests of Epirus in Greece (two months each year).
Hobbies: Sports (basketball, swimming, gym), traveling.

References

- **Prof. Costas Foudas**, CERN & Univ. of Ioannina - Dept. of Physics.
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Nikitas Loukas, August 10, 2016