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Summary

I am a Doctor of physics with 7 years experience in experimental particle physics, with focus on the following areas: particle detectors(commissioning, installation, hardware maintenance, data acquisition, performance tests and analysis), physics analysis, data acquisition/readout systems, monitoring/control systems and vacuum systems.

Professional Experience

Dec, 2014 - ... ,

University of California, Irvine, Post Doctoral Scholar

Currently working at UCI, mainly on the Run-II off-detector readout system of the ATLAS Cathode Strip Chambers, in the Muon Spectrometer of the ATLAS experiment/CERN.

- **Operations:** Carried out the day-to-day operation responsibility of the CSC Run-II off detector readout system.
- **Integration with ATLAS TDAQ:** Took part in integration of the CSC off-detector readout system with the TDAQ infrastructure, implementation of recovery systems.
- **Hardware:** Hardware installation and optical power measurements.
- **Performance Tests:** Carried out performance tests.
- **On-call responsibilities:** CSC DAQ secondary on-call, MDT/CSC primary on-call duties.
- **Documentation/Training:** Prepared extensive documentation on various parts of the system, trained other on-call responsibles on the CSC off-detector readout system.
- **Monitoring:** Implementation of monitoring applications to monitor system status.
- **Test Stand:** Built a test stand for the off detector readout system.

Feb, 2014 - Dec, 2014 ,

CERN - Beam Line for Schools, Project Associate

<http://cern.ch/bl4s>

- **Detector Responsible:** Main responsible of the detectors that is used in the beam line, such as Delay Wire Chambers, Lead Glass Calorimeters, Scintillators, Cherenkov Counters. The responsibility consists of testing, calibration, commissioning, installation and analysis of detectors.
- **DAQ:** Implemented a modular acquisition and monitoring software using NIM and VME systems on hardware, and ATLAS TDAQ Framework on the software side.
- **Analysis:** Developed a C++ and ROOT based analysis software.
- **Organization:** Organized meetings with experts/technicians, handled gas installation for detectors, radioactive source loans and mechanical/electrical work.
- **Installation and running of the experiment:** The experimental setup is installed at East Area, T9 beamline and 2 different experiments was run for a week, during which beam parameters were manipulated according to needs of experiments.

- Documentation:** Prepared detailed documentation and Twiki pages about every aspect of the project to ensure the knowledge transfer for next years.

2009 - 2014 ,

CERN - CERN Axion Solar Telescope, Doctoral Researcher

As part of my doctoral studies, I worked in the CAST experiment, spending most of my time in CERN. My responsibilities consisted of:

- Micromegas detectors:** Took responsibility of 2 micromegas detectors for installation and maintenance, data analysis, data acquisition system, upgrades and vacuum system. Did the full analysis of the detectors for the data taken in 2008, and the results are used in all CAST papers.

- Computational Fluid Dynamics(CFD) Simulations:** Run CFD simulations together with CERN EN-CV group, analysed and interpreted the results.

- Analysis:** Developed new methods for interpreting CAST data using results of the CFD simulations.

- Shift/Run Coordination:** Did the shift coordination during 2012, and run coordination during several periods of data taking as the on-call responsible of the experiment.

- CAST Slow Control System:** Been the main responsible of the Labview based acquisition system for hardware maintenance, installation of new sensors and software upgrades.

- Magnet movement system:** Organized and analysed Grid/Survey measurements which assure the CAST magnets solar tracking accuracy, developed new analysis methods, assisted the Solar Filming.

- CAST Contact person:** Trained official CERN guides at CAST, maintained the visitor area, updated CAST posters, maintained the CAST official website.

2009 - 2012,

Bogazici University, Teaching Assistant, Part-time

Taught laboratory courses on introductory physics and electronics.

2003 - 2005 ,

Koc University, Laboratory Research Assistant

Assisted laboratory experiments in the electronics laboratory.

2003 ,

Koc University, Laboratory Assistant

Assisted laboratory courses on introductory physics.

Education and Qualifications

2009 - 2013 , *PhD. in Physics, Bogazici University & CERN Axion Solar Telescope*

Thesis Title: Search for Axions with Micromegas Detectors in the CERN CAST Experiment

[CERN-THESES-2013-205]

Supervisor: Prof. Metin Arik

2005 - 2008, *M.S. in Physics, Bogazici University*

Thesis Title: Unitary Matrix Hopf Algebras and Theta-Deformed Fermion Algebra

Supervisor: Prof. Metin Arik

2000 - 2005 , *B.S. in Physics, Koc University* Graduated as top ranking student.

Technical Skills

Programming : *C++, Python, ROOT, php, Html, L^AT_EX, Bash*

Data Acquisition : *NIM, VME, National Instruments hardware, Labview, ATLAS TDAQ Framework*

Operating Systems: *Linux, Windows*

Office Software : *MS. Office, Libreoffice, Openoffice*

Other : *Doxxygen, web2py*

Trainings and Courses

2013 June,	tCSC - Thematic CERN School of Computing on High Performance Computing, Split
2012 August,	Euroscipy - European Conference for Scientists Using Python - Advanced Tutorial, Brussels
2011 January ,	ISTAPP - International School of Theory and Analysis in Particle Physics, Istanbul
2010 July ,	Euroscipy - European Conference for Scientists Using Python - Basic Tutorial, Paris
2010 January ,	ISOTDAQ - International School on Trigger and Data Acquisition, Ankara
2009 September,	LabVIEW Basics I-II Course, CERN, Geneva

Talks/Posters

A New ATLAS Muon CSC Readout System with System on Chip Technology on ATCA Platform
Topical Workshop on Electronics for Particle Physics, Lisbon, 2015

X-Ray Detectors of the CAST Experiment
13th Topical Seminar on Innovative Particle and Radiation Detectors, Siena, 2013

Performance of micromegas detectors in the CAST Experiment
2nd International Conference on Particle Physics, Istanbul, 2011

Language Skills

Turkish, *Native*

English, *Fluent*

French, *Intermediate*

Spanish, *Intermediate*

Awards and Honors

2012,	Berkol Doğan Award - Bogazici University Physics Department
2005-2007,	TUBITAK Domestic Scholarship for Masters
2005,	Top Ranking Student Award - Koc University Physics Department
2000-2005,	Vehbi Koc Scholarship - Koc University

Personal

A1 and B driving licence.

Official CERN guide since 2011.

Selected Publications

Search for Sub-eV Mass Solar Axions by the CERN Axion Solar Telescope with ^3He Buffer Gas
The CAST Collaboration, Phys. Rev. Lett., 107, 261302, 2011.

New Micromegas for Axion Searches in CAST
Dafni, T., et al., Nucl. Instrum. Meth. A, 628, 172-176, 2011.

Performance of Micromegas Detectors in the CAST Experiment
Yildiz, C., et al., J. Phys.: Conf. Ser., 347, 012029, 2012.

CAST Solar Axion Search with ^3He buffer gas: Closing the hot dark matter gap
The CAST Collaboration, Phys. Rev. Lett., 112, 091302, 2014.

Low background x-ray detection with Micromegas for axion research
Tomas, A., et al., JINST 9 (2014) P01001.

X-ray Detectors of the CAST Experiment
Yildiz, C., et al., JINST 9 (2014) C03047