Short Bio About Me 😊

Name: Shodruz Umedov

Country: Tajikistan

Where you study?:
– Lomonosov Moscow State University, Moscow, Russia

Field of Studies and Degree:
– Materials science, Master

What have you been doing at CERN, your Department-Group?:
– Development, testing and documentation of educational resources for the ATLAS Open Data project. Including Particle Physics analysis examples. EP-ADT-DQ Department

What are you thinking of doing after CERN?: PhD in Materials science

What you liked most in your experience as a summer student?:
– I liked everything! But I would suggest to increase the limited places to workshops and visit centers.
ATLAS Open Data Tree

http://opendata.atlas.cern
Datasets (p⁺p⁺ collision)

8 TeV (2012)

1 fb⁻¹

Data

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44 samples

13 TeV (2016)

10 fb⁻¹

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Framework(s)

13 TeV C++ analysis
- 8 examples

13 TeV Python analysis examples

non-ROOT based analysis examples

More analysis examples in all languages

8 TeV Analysis Examples

- HWWAnalysis
- TTbarAnalysis
- W/Z Analyses
- WZAnalysis
- ZZAnalysis

~50 variables

13 TeV Analysis Examples

- HWW / HZZ Analyses
- TTbarAnalysis
- W/Z Analyses
- WZ / ZZ Analyses
- HγγAnalysis
- XAnalyses

~100 variables

~50 variables
Notebooks

Jupyter notebooks (Python / C++) | (8 TeV / 13 TeV)

~ Analysis Examples
~ Framework Integers

- Histogram “one click” plotting
- More analysis methods
- Code explanation
- Code design

10 Notebooks for 8 TeV now ready for use

2 Notebooks for 13 TeV created

Let’s open the demo
Virtual Machine

- Linux OS with standard GUI (for any operating system)
- The OS is enhanced with all ROOT’s needed libraries and dependencies
- Jupyter Notebook – command shell for interactive computing
- Samples and tools for your analysis
- Some useful software (i.e., Python, gcc, ...)
- One click installation
Project general information

ATLAS Open Data resources

Explanation of Data, Notebooks, Software

Comprehensive interpretation of code and the tools, like the Virtual Machine

Data analysis teaching.

http://opendata.atlas.cern/tutorials/hackathon-2019
What I learned?:

- Data analysis and processing
- Create Notebooks, write bash scripts
- Code in Python and C++
- Testing (software, site, code etc…)
- Work with Virtual Machines and Linux OS
- Documentation with MarkDown
- Work in team on one project with Gitlab & Github