Last updated on March 27, 2017

Viktor D. Khristenko

- *Address* 510/1-004 CERN, CH-1211, Geneva 23, Switzerland
- *Phones* +41 (0)76 617 67 50 • +41 (0)75 411 28 74 • +7 (8)910 748 15 14
- *Email* vdkhristenko1991@gmail.com
- *Linkedin* https://www.linkedin.com/in/viktor-khristenko
- ***Languages*** Russian(native) • English(native fluency) • French(B1-B2)

Professional Activities

Group Lead - CMS Hadron Calorimeter Data Quality Monitoring Group 2014-Current

CERN - *European Organization for Nuclear Research, Geneva, Switzerland*

- Responsible for Data Certification Process - Validating the Usability of Collected Data by Physics Analyses
- Designed and Implemented Criteria & Instructions targeting Calorimeter Performance Evaluation
- Critical ***Data-driven Quality Control Applications***

Deputy Coordinator - CMS Hadron Calorimeter Operations Group 2015-2016

CMS - *Compact Muon Solenoid Experiment @CERN, Geneva, Switzerland*

- "CMS 2015 Achievement Award"
- Responsible for Operational Aspects of all the Components of the ***Calorimeter*** System
- Coordination ⇒ Installation ⇒ Debugging ⇒ DataTaking ⇒ Status Report ⇒ Collaboration ⇒ Training Newcomers

Graduate Research Assistant 2014-Current

CMS *Experiment* ***@CERN****, Geneva, Switzerland* • *The University of Iowa, Iowa City, IA, USA*

- ***Big Data*** Analyses, e.g. ***Higgs Boson*** Searches
- Design, construction and analysis of ***Monte Carlo*** Simulations of Particle Detectors using ***Geant4***
- Data Analysis and Operations Support for ***Fermilab*** T-1041 "CMS Forward Calorimetry R&D" Experiment

Graduate Teaching Assistant 2012-Current

The University of Iowa, Iowa City, IA, USA

- Teaching Laboratory and Discussion Sections for General Physics Courses.

Research Assistant 2009-2012

Coe College, Cedar Rapids, IA, USA

- ***Raman Spectroscopy*** Measurements of Titanium Oxide-based glasses
- ***Scientific Application Development*** for ***Nuclear Magnetic Resonance Spectroscopy***

Software Projects

ROOT4J

https://github.com/diana-hep/root4j

- ROOT I/O for JVM

Spark-Root

https://github.com/diana-hep/spark-root

- Extension of ROOT4J for use with Apache Spark

Programming Skills

Experienced

C/C++/STL/Boost • *python* • *Scala* • *Apache Spark/MapReduce* • *SQL* • *Graphlab* • *ROOT* • *git* • *LaTeX* • *scikit-learn*

Familiar

Java • *JScript* • *php* • *Elixir/Erlang* • *Pascal* • *Go*

Education

PhD in Physics 2012-2017(Expected)

The University of Iowa, Iowa City, IA, USA

- Thesis Title, "Search for the Standard Model Higgs Boson in the $\mu^+\mu^-$ decay channel in pp collisions at $\sqrt{s} = 13$ TeV in CMS, Calibration of CMS Hadron Forward Calorimeter and Simulations of Modern Calorimeter Systems"

BA Physics and Mathematics; Cum Laude 2009-2012

Coe College, Cedar Rapids, IA, USA

- ***Minor in Computer Science***
- Dean's List Spring 2010 & Fall 2010

Department of Cybernetics 2008-2009

Moscow Engineering Physics Institute, Moscow, Russia

Online Education Certificates

Coursera

- ***Functional Programming*** Principles in ***Scala*** (EPFL). Certificate
- ***Functional Program*** Design in ***Scala*** (EPFL). Certificate
- ***Machine Learning*** Foundations: A Case Study Approach (University of Washington) Certificate
- ***Machine Learning***: Regression (University of Washington) Certificate
- ***Machine Learning***: Classification (University of Washington) Certificate

Athletic Activities

Volunteer Assistant Tennis Coach 2013-2014

The University of Iowa Hawkeyes Men's Tennis Team, NCAA Division 1

Student Athlete 2009-2012

Coe College, Varsity Men's Tennis Team, NCAA Division 3

- IIAC Team Champion (2012)
- NCAA Regionally Ranked in Singles (2011, 2012)
- IIAC All-Conference (2009, 2011, 2012)
- IIAC Conference Champion (2009, 2010, 2011, 2012)
- Team Captain (2011, 2012)

Publications & Presentations

- "SPARK-ROOT: ROOT I/O for JVM and Applications for Apache Spark"
  "ROOT I/O Workshop", CERN, Feb 2017
- "10B NMR Powder Pattern Optimized for Distribution of the Quadrupole Parameters"
  "Borate 2011: 7th International Conference on Borate Glasses, Crystals and Melts" Halifax, NS Canada
- V. Khristenko et al., "SpectraFit: A New Program to Simulate and Fit Distributed 10B Powder Patterns: Application to Symmetric Trigonal Borons.", Phys. Chem. Glasses: Eur. J. Glass Sci Technol. B, June 2012, 53 (3), 121-127.
- U. Akgun, ..., V. Khristenko et al., "Characterization of 1800 Hamamatsu R7600-M4PMTs for CMS HF Calorimeter upgrade", Journal of Instrumentation, 2014 JINST 9 T06005
- M. Dettmann, ..., V. Khristenko et al., accepted for publication, "Radiation Hard Plastic Scintillators for a New Generation of Particle Detectors", JINST_023P_0716
- U. Akgun, ..., V. Khristenko et al., "Quartz Plate Calorimeter Prototype with Wavelength Shifting Fibers", Journal of Instrumentation, JINST 002P 0412, 2012
- A. Albayrak-Yetkin, ..., V. Khristenko "Secondary Emission Calorimetry: Fast and Radiation-Hard", Snowmass White Paper, arXiv: 1307.8051.