

Othmane Rifki, Ph.D.

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Summary

Data scientist with 7 years experience and in-depth understanding of analytic methods and their implementations. Performed statistical analysis of large datasets processed with large-scale distributed computing systems using C/C++ and Python.

Part of a 3000+ person collaboration searching for rare signals among large backgrounds in high energy proton-proton collisions at the Large Hadron Collider (LHC) Long involvement in codebase of more than 10 million lines of C++ and almost as many lines of Python Expert in petabyte data reduction (ATLAS 10 PB/year), world-wide grid computing, and data visualization Lead analysis groups as “Editor” in two searches for signals of supersymmetry and other exotic decays, managed a team of 5-6 analysts, eventually wrote the research paper, and defended its approval—a period of about a year

- 🕒 7+ years of data analysis and visualization using **Python, C/C++**, Bash
- 🕒 2+ years of machine learning using **pandas, scikit-learn, TensorFlow, OpenCV**
- 🕒 7+ years of large-scale computing using LHC Grid, Open Science Grid, Mira Supercomputer, HTCondor
- 🕒 7+ years of contributing to sizable projects using distributed version-control systems (**git**)

Skills

- 🕒 **Languages:** Analyzed and visualized high-value datasets with software packages developed in multiple languages
 - Core languages: Python, C/C++/STL (10+ years)
 - Data science software: matplotlib, numpy, scipy, scikit-learn, pandas, jupyter, Keras, TensorFlow, OpenCV, docker
 - General software: Linux, bash, git, svn, QT, Matlab, Mathematica
- 🕒 **Leadership:** Led several scientific groups to achieve time-critical targets
 - Managed teams of **5-20 researchers** leading to several **peer-reviewed** journal publications
 - Supervised **PhD and Master students** with successful thesis defenses
 - Organized and chaired weekly meetings and delegated tasks with emphasis on individual strengths
- 🕒 **Communication:** Excelled in written and verbal communication skills
 - Fluent in English, French, Arabic with basic skills in German
 - Presented the latest scientific advancements at **notable international conferences** with 500+ attendees
 - Summarized research and data analysis to non-technical audiences at various **outreach activities** ([example](#))
- 🕒 **Publication:**
 - Published **15 scientific papers** in peer-reviewed particle physics and instrumentation journals ([complete list](#))

Experience

- 🕒 [**Deutsches Elektronen-Synchrotron \(DESY\)**](#) **Hamburg, Germany**
Sep 2017 - Present
Post-Doctoral Research Fellow
 - Performed likelihood-based statistical analyses on a petabyte-scale dataset, using predictive modeling algorithms
 - Automated pick-and-place assembly with robotics and advanced optics to achieve **micron level precision**
 - Achieved **high accuracy pattern matching** using computer vision algorithms in challenging conditions
 - Administered a laboratory budget of **300k Euros** coordinating a team of scientists, engineers, and suppliers
- 🕒 [**European Organization for Nuclear Research \(CERN\)**](#) **Geneva, Switzerland**
Jul 2015 - Aug 2017
Doctoral Researcher
 - Designed real-time data processing algorithms with strict real-time performance to process 160 gigabytes/second
 - Supervised a team of 10 scientists to ensure high-quality data recorded by the ATLAS detector at CERN
- 🕒 [**Argonne National Laboratory \(ANL\)**](#) **Lemont, IL, United States**
May 2014 - Jun 2015
Research Fellow
 - Won a \$30k US level Analysis Support Center fellowship awarded to 2 students a year to work with ANL scientists

- Simulated complex particles production and interaction using IBM Mira, one of the world's fastest supercomputers

Education

☑ **University of Oklahoma** *Ph.D. in High Energy Physics*

Norman, OK, United States

☑ **Drexel University** *B.Sc. in Physics with High Honors*

Philadelphia, PA, United States

Activities

☑ **Triathlon:** Competing in the Hamburg Landesliga in the 2018 and 2019 seasons

☑ **Diving:** CMAS 3 star diver with TDI advanced nitrox certification