Postdoctoral Position in Data Analysis for Large-Scale Gamma-Ray Spectrometers at Argonne National Laboratory

Argonne National Laboratory seeks two postdoctoral appointees to conduct research in data analysis for large-scale Gamma-ray spectrometers. The successful candidates will be hired in the Low-Energy Nuclear Physics Research Group (LER) of the Physics Division and will work closely with scientists in the Mathematics and Computer Science Division. The detection of gamma-ray emission from excited nuclear states plays a vital role in nuclear science. The goal of this multi-disciplinary project is to attack two open and connected problems in the utilization of large gamma-ray arrays, namely (1) to make significant improvements in Gamma-ray tracking as it applies to GRETA/GRETINA, and (2) to develop a new framework for the construction of nuclear level schemes which are the major end products of these world-class spectrometers. We aim to leverage advances in machine-learning, high-performance computing, and physics insight to achieve this goal.

Candidates considered for the position must have:

● Recently received or near completion of their Ph.D. in physics, applied mathematics, computer science, or related discipline within the last 3 years.
● Graduate/postgraduate research in machine learning, and programming experience (Python, PyTorch, C/C++, or Fortran).
● In addition, experience in one or more of the following: design of nuclear physics experiments and physics interpretations, data analysis, and mathematical optimization.

This project brings together two world-leading divisions, Physics, see https://www.anl.gov/phy and Mathematics and Computer Science, see https://www.anl.gov/mcs. The Argonne Physics Division has programs in low energy and medium energy nuclear physics, nuclear theory, nuclear data, accelerator R&D and operates the DOE Office of Science, Office of Nuclear Physics National User Facility, the Argonne Tandem-Linac Accelerator System (ATLAS). As a leader in the computing sciences, the MCS Division provides the numerical tools and technology for solving some of our nation’s most critical scientific problems. In addition to our world-class research, we develop the software for some of the fastest, most powerful computer systems in the world: systems that are enabling scientists to tackle problems previously considered infeasible.

The appointment will be for two years with the second-year dependent on funding and performance. The expected starting date is between early to mid 2022. US citizenship is not required. Interested applicants should apply at https://www.anl.gov/hr/postdoctoral-applicants and specify requisition #411994. In addition, please forward your CV and arrange for three letters of reference to be sent to Dr. Michael P. Carpenter (carpenter@anl.gov). Review of applicants will begin January 15, 2022, and the positions will remain open until filled.

As an equal employment opportunity and affirmative action employer, and in accordance with our core values of impact, safety, respect, integrity and teamwork, Argonne National Laboratory is committed to a diverse and inclusive workplace that fosters collaborative scientific discovery and innovation. In support of this commitment, Argonne encourages minorities, women, veterans and individuals with disabilities to apply for employment. Argonne considers all qualified applicants for employment without regard to age, ancestry, citizenship status, color, disability, gender, gender identity, genetic information, marital status, national origin, pregnancy, race, religion, sexual orientation, veteran status or any other characteristic protected by law.

Argonne employees, and certain guest researchers and contractors, are subject to particular restrictions related to participation in Foreign Government Sponsored or Affiliated Activities, as defined and detailed in United States Department of Energy Order 486.1A. You will be asked to disclose any such participation in the application phase for review by Argonne's Legal Department.