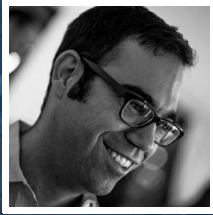


Particle Physics in Data Science



Kyle Cranmer

Associate Professor, Physics Member, Center of Cosmology and Particle Physics Affiliate faculty, Center of Data Science

CURRENT RESEARCH

The interface between theoretical and experimental physics

The impact of basic research is difficult to predict, but a number of spin-off technologies are created from it — the most famous example is the invention of the world wide web, created at the European Organization for Nuclear Research (CERN) as a platform to share information. Dr. Kyle Cranmer, Associate Professor of Physics at New York University, is now part of the advisory board for INSPIRE, an outgrowth of the first website in the US created by particle physicists at Stanford University. Therefore, unlocking secrets of the universe will not only be a lasting legacy of our generation, but also yield practical rewards of basic research. To this end, Dr. Cranmer conducts fundamental physics research as well as extensive data science to create an infrastructure that will facilitate data analysis in the future. Much like the creators of the first US website, Dr. Cranmer sees his initiatives around collaborative data analysis and novel means of digital publication as laying the groundwork for a new era in science. These initiatives are proving to be very effective within the context of particle physics and have attracted interest from publishers, the applied mathematics and statistics communities, and even the highest levels of advisors for the US government.

Dr. Cranmer aims to learn something new and fundamental about how the universe works. He began focusing on a hypothetical particle called the Higgs boson as an undergraduate in 1998, and spent several years developing new tools and strategies to search for this particle in one of the two big experiments at CERN's Large Hadron Collider (LHC). In 2008, he was presented with the PECASE award from President Bush for these efforts. In 2012, he and his...

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AFFILIATION



New York University

EDUCATION

- Ph.D. in 2005, University of Wisconsin-Madison
- M.A. in 2002, University of Wisconsin-Madison
- B.A. in Physics and Mathematics 1999, Rice University

RESEARCH AREAS

Technology, Computational Sciences / Mathematics, Informational Sciences / Internet, Materials Science / Physics

FUNDING REQUEST

Your contributions will support the continued research of Dr. Kyle Cranmer at New York University as he probes fundamental particle physics and develops broadly applicable methodology for collaborative data-intensive science. Donations will help support personnel and computing resources ranging from \$5K-100K. Donations will particularly help the Crayfis project that requires high-level developers. Partner with Dr. Cranmer as he incorporates relevant technology to expand the field of physics!

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