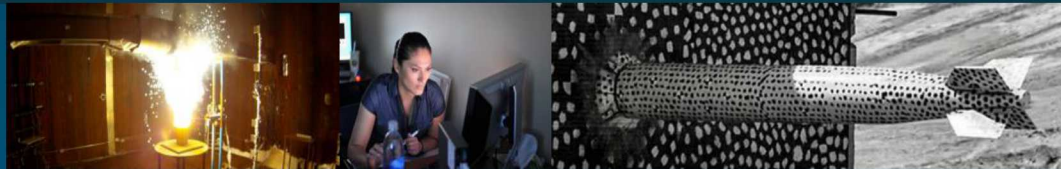Sandia National Laboratories

Data Analytics Repository for International Nuclear Safeguards

Joshua Rutkowski and Zoe Gastelum

ENERGY NNSA

Data Analytics increasing visibility in safeguards

2017 IAEA emerging technologies workshop
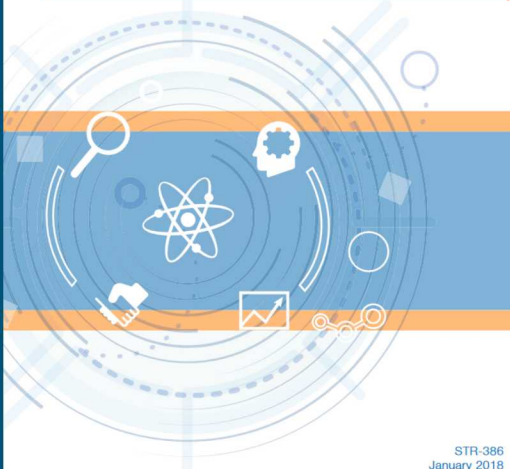
ESARDA 2019 opening plenary

Data Analytics increasing visibility in safeguards

Annual Meeting special sessions

Working Groups

Workshops

Multidisciplinary

Data sharing in science
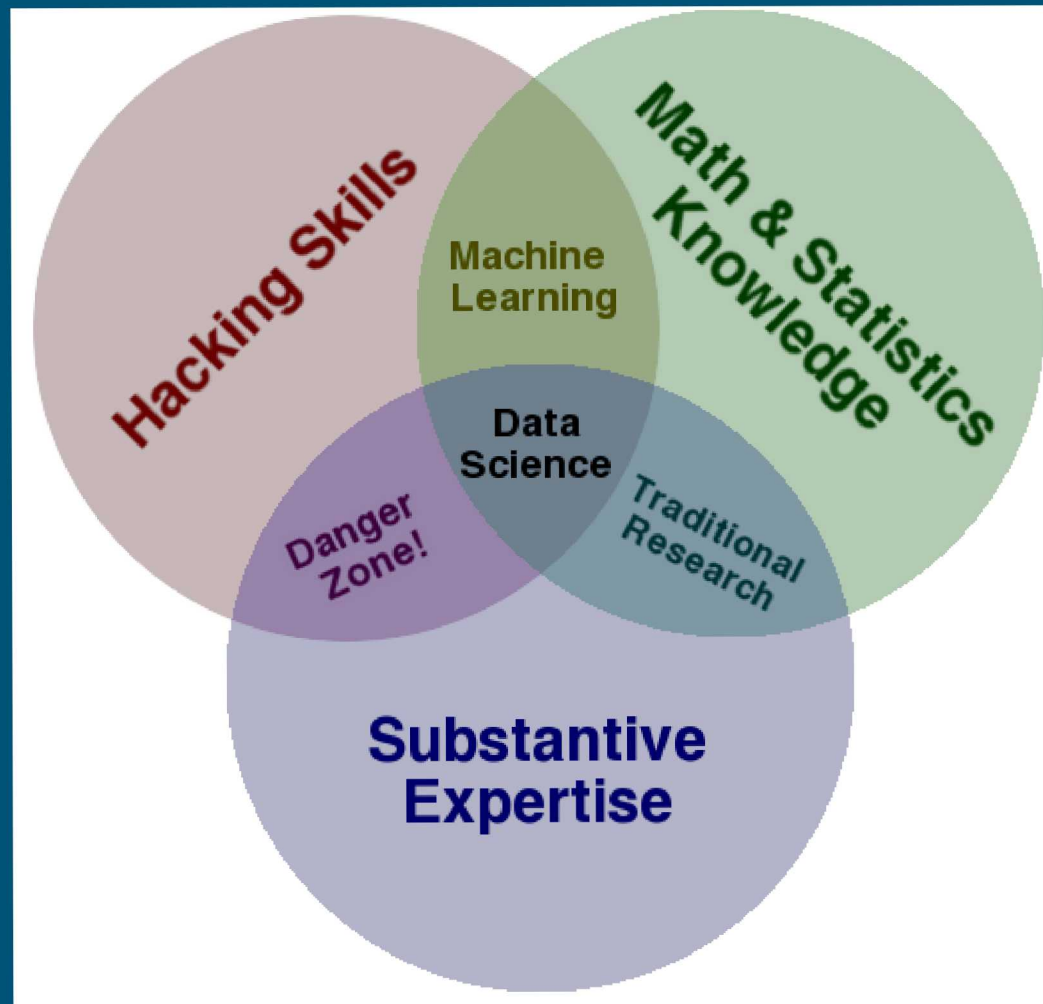
Editorial from Nature Communications (July 2018)

"Who benefits from sharing data? The scientists of future do, as data sharing today enables new science tomorrow."

https://zenodo.org/ accessed 9/26/2019

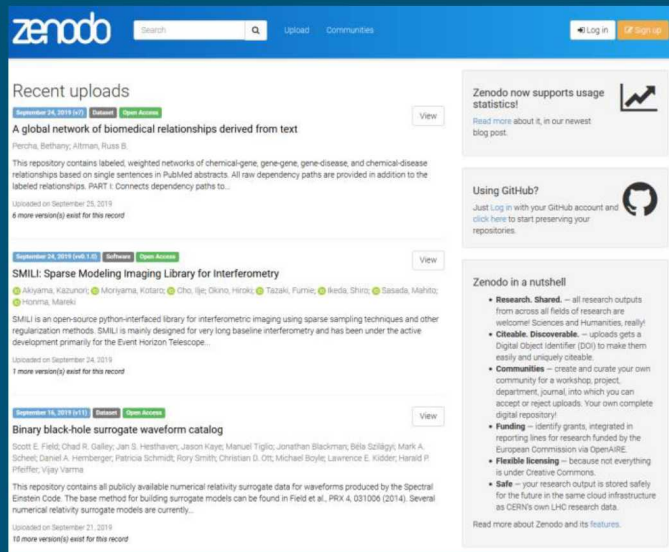https://figshare.com accessed 9/26/2019

Data Analytics Repository

Repository of real and simulated datasets, accompanied by documentation of current safeguards data analytics challenges or needs

Journal publications and conf proceedings do not meet this demand because:

- Difficult to apply a focused paper/presentation on a different problem set
- Data is not available
- Papers/presentations rarely discuss failures and non-starts

The U.S. Dept. Of Energy's Multi-Informatics for Nuclear Operations Scenarios (MINOS) program

Described in recent INMM paper by Daniel E. Archer, et al

"All data collected in this work are being shared with other data collectors and data analysts in the MINOS program. These data may be available to outside users by request."

Data!

Use cases

Approaches

Lessons learned

- Data!

- Funding sources
- Cooperation
- IAEA sensitivities
- Real events or situations for use cases

ESARDA

Verification Technologies and Methodologies (VTM) Working Group

5 December 2019 at JRC-Ispra, Ispra, Italy

Morning Session: **Data Analytics for Safeguards and Nonproliferation Verification**

Afternoon Session: **VTM Data Analytics Challenge**

INMM

Emerging Digital Technologies Workshop

April 2020 at Livermore, California, USA