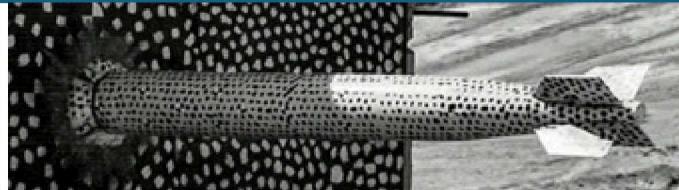


ESARDA Verification Technologies and Methodologies Working Group: Data Analytics Challenge



PRESENTED BY

Zoe Gastelum



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Background

The ESARDA 2019 Reflections Group was tasked with developing a “roadmap to improve and enhance the quality, effectiveness and efficiency of safeguards and nonproliferation in Europe and abroad,” and “ensure that the future activities of ESARDA are both consistent with the Association’s purpose... and address the needs of the ESARDA members and/or stakeholders.”

As part of their activities, the Reflection Group developed several short- and medium- term strategies, many of which focused on data analytics. These reflection group outcomes coincided with the Verification Technologies and Methodologies working group electing to focus on the topic of data analytics for the winter 2019 working group meeting.

- Geological Data, Olli Okko (STUK)
- Human-Data Interactions, Zoe Gastelum (SNL)
- Application of machine learning to two nonproliferation use cases, Ian Stewart (KCL)
- Data Visualization and Visual Analytics, Cristina Versino, JRC
- Ontologies for Nuclear Non-proliferation purposes, Ross Peel (KCL)
- Machine Learning in the Framework of Spent Nuclear Fuel Verification, Riccardo Rossa, SCK-CEN
- Machine learning for Nuclear safeguards for applied nuclear physics, Sophie Grape (UU)
- ML and Robotics for Nuclear Safeguards, Erik Wolfart (JRC)
- Data Analytics Challenge - ALL

Conception of the Data Analytics Challenge

- Purpose: all work on the same/similar data from different angles, interests, perspective
- Topic: Knowledge management
- Datasets:
 - INMM annual meeting abstracts
 - ESARDA Symposium and Bulletin full text
 - US/DOE Nuclear Data
- Questions we might answer?

Path Forward

- To be discussed at ESARDA Annual Meeting, Luxembourg
- May 6th, afternoon: Joint session with Export Control Working Group
- May 7th, morning: ½ day session on Data Analytics Challenge datasets, relevant questions, progress to-date, future opportunities