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CONsortium of Nuclear sECurity Technologies

CONNECT Undergraduate Research Experience



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2:00PM - 3:30PM

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Beyond Prediction: Explainable Artificial Intelligence for Knowledge Discovery in National Security Applications

Explainable artificial intelligence (XAI) should not be limited to helping an end-user determine whether a machine learning model is reliable; it can be much more powerful. Creative uses of XAI show promise for knowledge discovery, and especially for extracting insights from complex scientific data beyond current capabilities of, but in close collaboration with, domain scientists. In this talk, we will explore non-standard uses of XAI, including recent results from a nuclear chemistry application, methodological development, and future potential.

Lissa Moore is a senior data scientist in the Foundational Data Science group at Pacific Northwest National Laboratory, focusing on explainable machine learning, with applications in a wide variety of domains including nuclear nonproliferation and remote sensing. Prior to joining PNNL in 2022, Lissa was a scientist at Los Alamos National Laboratory for 7 years in the Information Sciences Group and High Performance Computing Design group. She also founded and advises for the annual Northern New Mexico Community Data Sprint, which provides free data science support for local nonprofit organizations.

