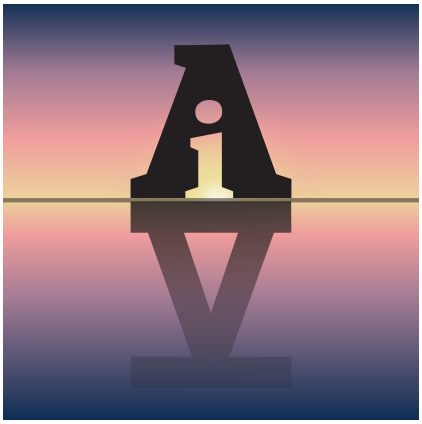

RECENT ADVANCES IN AI FOR NATIONAL SECURITY

Machine Learning-Enabled Materials Engineering (MEME) – **Kevin Tibbetts**

Poster Abstract

There has been substantial growth recently in "intelligent material design" efforts where computational materials science, machine learning, and database mining play a role in improving the discovery of new materials. Current efforts at MIT Lincoln Laboratory are underway to improve both the speed and breadth of materials discovery with an end-to-end approach, starting with the identification of a material need and ending with synthesis and characterization of potential materials. This effort includes systems analysis, machine learning-based material screening, theoretical computation, and high-throughput synthesis and characterization of new materials.

About the Author(s)

Kevin Tibbetts is a technical staff member in the Advanced Materials and Microsystems Group at Lincoln Laboratory. Kevin's research focuses on material property prediction through theoretical computations as part of a program to integrate artificial intelligence, theory, and experimental synthesis to expedite the discovery of new materials. Kevin holds a BS degree in engineering physics from the University of Maine and a PhD degree in materials science from MIT. His graduate work focused on density functional theory modeling of battery materials, with a concentration in chalcogenide nanotubes for use as high-rate electrodes.

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