

# Object Classification in Multi-View X-Ray Images Using R-CNNs



*PRESENTED BY*

Carter Jameson (Org. 9365)



Sandia National Laboratories is a multimission laboratory managed and operated by National Technology & Engineering Solutions of Sandia, LLC, a wholly owned subsidiary of Honeywell International Inc., for the U.S. Department of Energy's National Nuclear Security Administration under contract DE-NA0003525.

# Lynceus

- Detecting organic threat items in personal baggage using dual-view X-Ray scan data
- Using deep learning techniques to detect items, including image classification CNNs
- Leveraging a custom X-ray dataset collected onsite at SNL-NM
- Explore integration of algorithms into field environments for real-time usage



# MX-RCNN

- A neural network architecture specifically designed for object detection in multi-view X-ray scan images
- Leverages the familiar Faster Region-based CNN (R-CNN) architecture, including pretraining
- Uses a novel multi-view pooling layer to create 3D feature volumes from 2D feature maps

