Building Future Safeguards Capabilities
**SYMPOSIUM**
ON INTERNATIONAL SAFEGUARDS

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# Leveraging Computer Vision for Imagery Analytics

This paper will explore the potential applications and limits of computer vision for analyzing satellite imagery and ground imagery for safeguards purposes. The paper will first detail the current state of the art as it relates to computer vision for three main tasks related to ground and satellite imagery analysis: land classification, change detection, and object identification. The paper will consider the availability of both ground and satellite imagery, and in particular, the effect of higher revisit rates from small satellites on machine learning prospects. Under the banner of computer vision, this paper will then explore the available toolkits and machine learning algorithmic approaches to these tasks that might be useful in a future context. This paper will then examine how these techniques may be leveraged for informing safeguards assessments at the IAEA. Finally, the paper will evaluate both the technical and practical limitations of incorporating computer vision-based imagery analytics into safeguards.

## Which "Key Question" does your Abstract address?

TEC3.2

## Which alternative "Key Question" does your Abstract address? (if any)

TEC3.1

## Topics

TEC3

**Primary author:** DILL, Catherine (Middlebury Institute of International Studies at Monterey)

**Co-author:** Ms HANHAM, Melissa (Middlebury Institute of International Studies at Monterey)

**Presenter:** DILL, Catherine (Middlebury Institute of International Studies at Monterey)

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