Background

- Project space - Disinformation via Images
  - Image content
  - Text altering/addition
- UND CVRL challenges
  - Workflows
  - Scalability
Initial Project: Image Forgery Detection via Classical ML Methods Tooling

Vast Literature

Lack of Standards

Implementations in Proprietary Programming Environment (Matlab)

Third Party Service
Initial Project Result: pylFD - Python Image Forgery Detection Toolkit

Python-Based
Open Source
Standardized and Easily Extendable
Self-hosted and Scalable Service

```
10| import os
11| import numpy
12| import pylfd
13| import cv2
```
Status and Next Steps

Completed - pyIFD development:
- Algorithms ported + testbed + CI
- Validation scripting + workflow
- Library released on Github: pyIFD

In progress - pyIFD assessment:
- Performance analysis of pyIFD on MFC18 for publication in IEEE T-IFS
- Comparison of classical pyIFD methods with ManTraNet
- Exploration of fusing classical pyIFD methods

Enqueued - Unsupervised motif mining:
- Given unlabelled, unsorted data determine clusters of related images
- Per pyIFD approach, method will be approachable/extendable
- Can discover new classes (Ukraine example)
Thank you!

Project page:
https://research.redhat.com/blog/research_project/disinformation-detection-at-scale/

pyIFD repo:
https://github.com/EldritchJS/pyIFD