



DataPhilly Workshop | 1.21.21 | @azavea

# Satellite Imagery + Python

An introduction

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# Today's Agenda

- 1 About me
- 2 Motivation: why earth observation?
- 3 Where to find data
- 4 Workshop
  - a The basics
  - b Preparing data for machine learning

Hi, I'm Simon

# Why earth observation data?

- It's becoming cheaper to put satellites into space
- Machine learning → dramatically expand capacity to analyze all imagery
- Ecosystem of software to process data

## ■ SOFTWARE ENGINEERING

### Ethical Machine Learning for Disaster Relief: Avoiding the Second Disaster

By Niki LaGrone on November 25th, 2019

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After the deluge, there's the...well, deluge. Or so it might seem to aid workers and agencies used to the phenomenon known as the "[second disaster](#)." Following a crisis, a sea of donations and volunteers from across the globe flood relief agencies. The second calamity? How few of them are suitable for a crisis.

At best, abandoned items create environmental hazards. In 2004, for example, Indonesians burned [rotting piles of unneeded clothing donations](#) following the Indian Ocean tsunami. At worst, they [divert \(often scarce\) time and resources](#) away from victims.



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# Where to get data

## Imagery

- [Philadelphia Aerial Imagery \(OpenDataPhilly\)](#)
- [xView](#)
- [SpaceNet](#)
- [Landsat](#)

## Geospatial labels

- [OpenDataPhilly \(lots of geospatial data\)](#)
- [OpenStreetMap \(OSM\)](#)
- Lots of other places

# Workshop!