Deep Learning with Imagery and 3D data

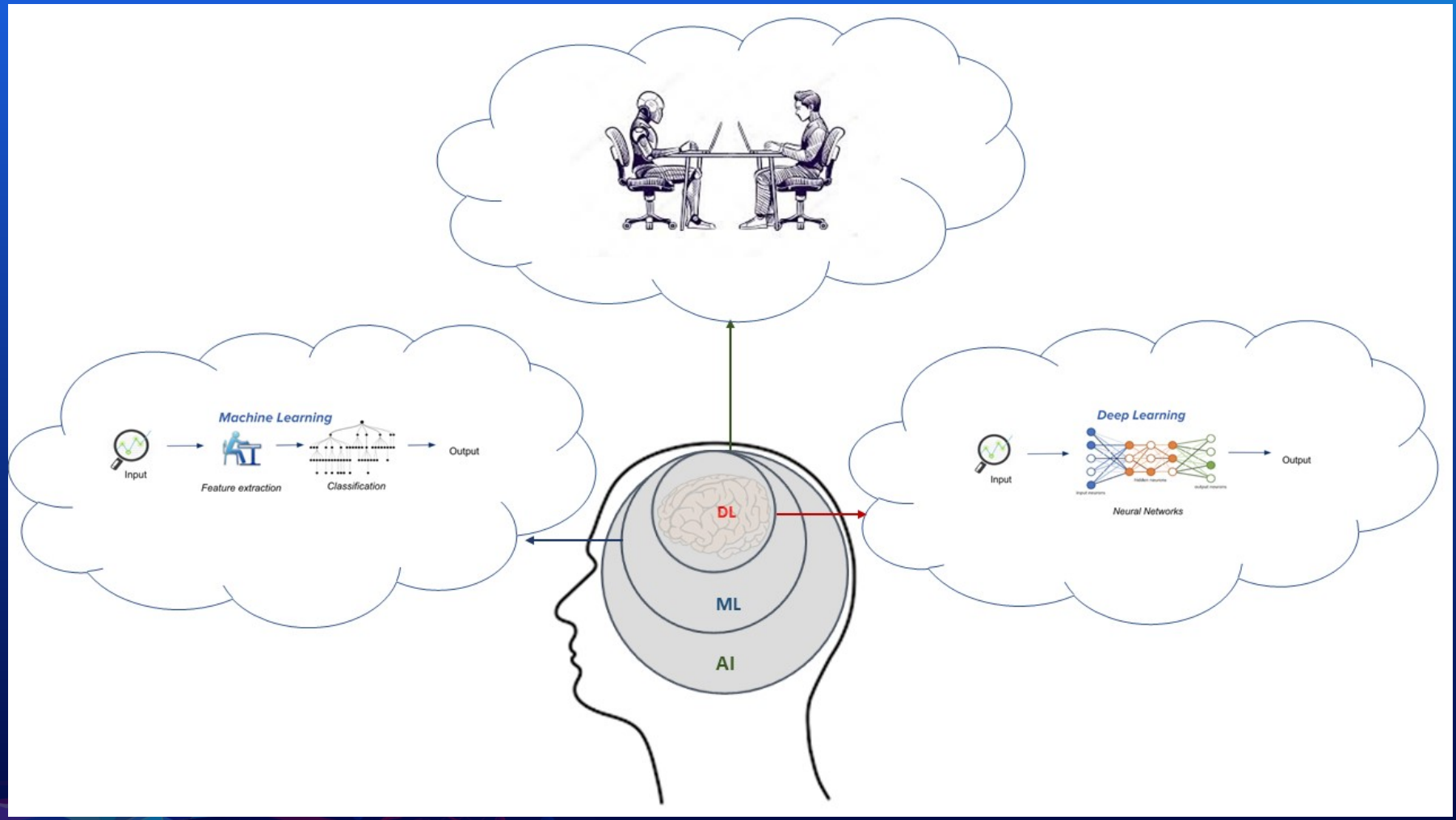
Atishay Jain, Priyanka Tuteja, Guneet Mutreja, Vaibhav Raj

2021 ESRI
DEVELOPER SUMMIT

Overview

- What is Deep Learning ?
- Deep Learning Models in ArcGIS
- Demo – Ready to use Model
- User Experiences
- Demonstrations – Imagery
- Demonstrations – 3D
- Demonstrations – Motion Imagery
- Closing Remarks
- Q & A

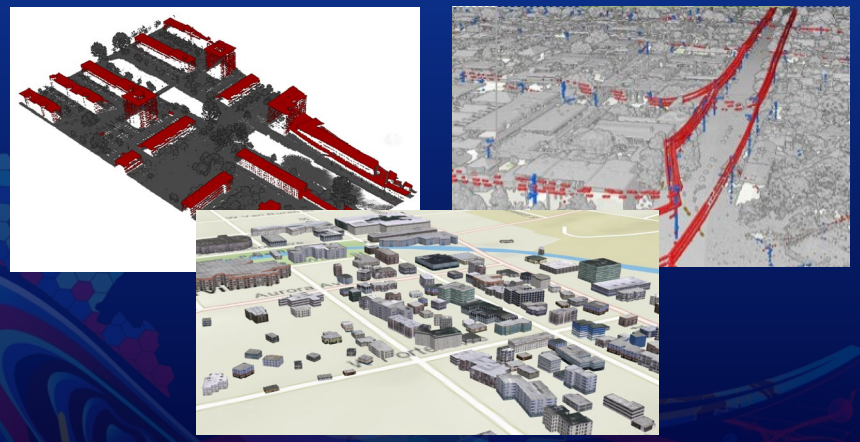
Deep Learning – The New Buzz Word



Deep Learning Models in ArcGIS

Imagery / Motion Imagery

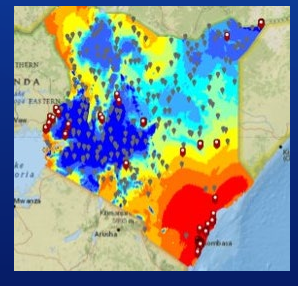
Text

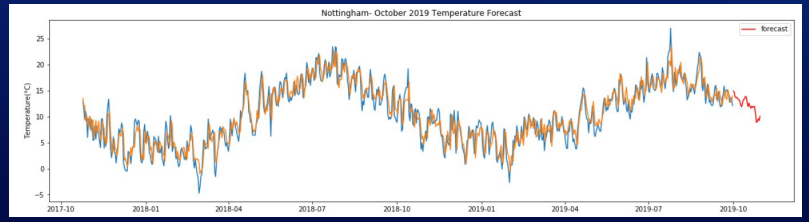


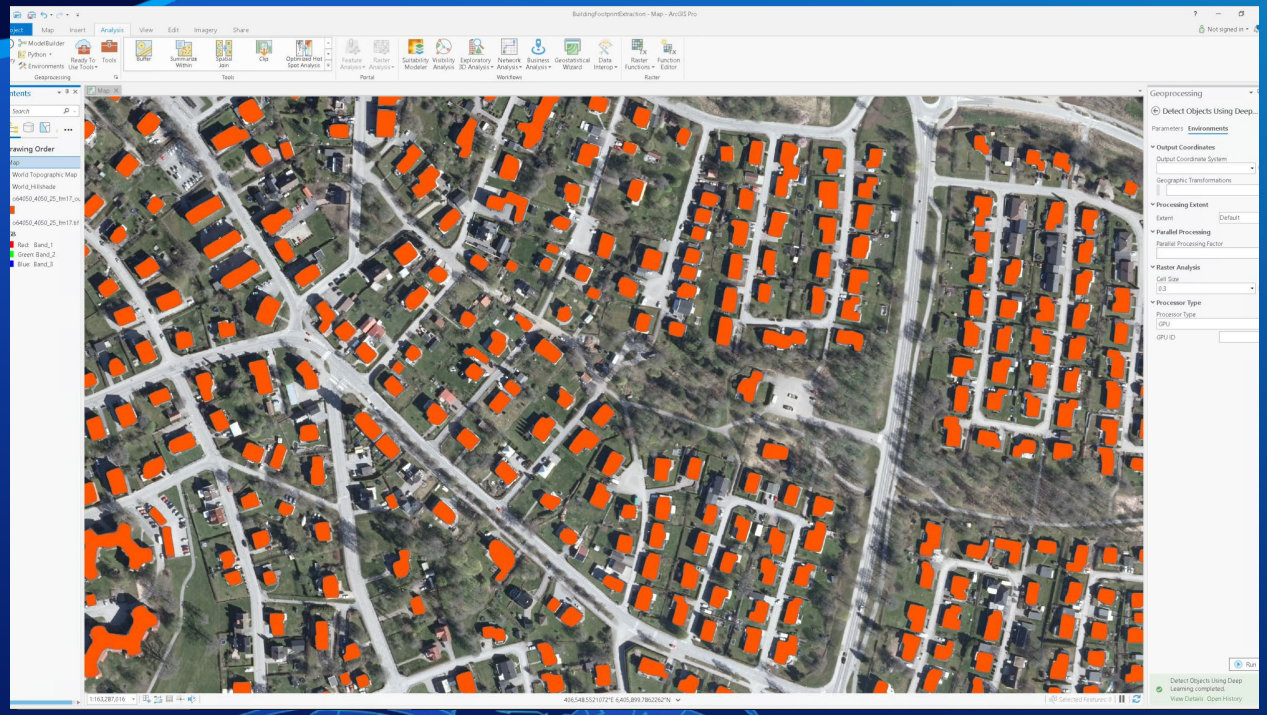
3D

Tabular Data

220, soyth rhodeisland aveune, mason city, iowa, 50401, us	220, s rhode island ave, mason city, ia, 50401, us
2920, 1st srteet south west, mason ciry, iowa, 50401, us	2920, 1st st sw, mason city, ia, 50401, us
210, s rhode island ave, mason ctiy, ia, 50401, us	210, s rhode island ave, mason city, ia, 50401, us







Ready to use models - Building Footprint Extraction

User Experiences

ArcGIS Pro

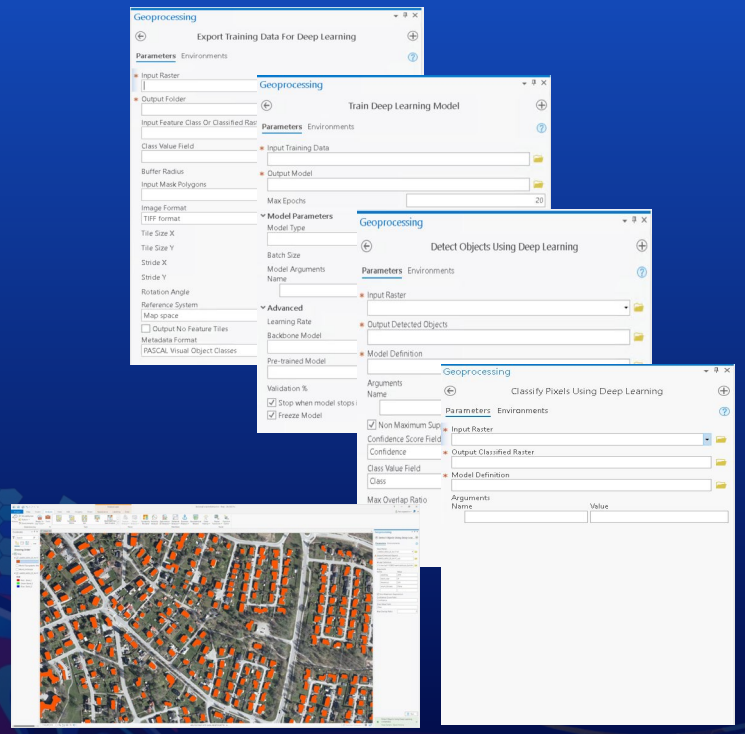
ArcGIS API for Python

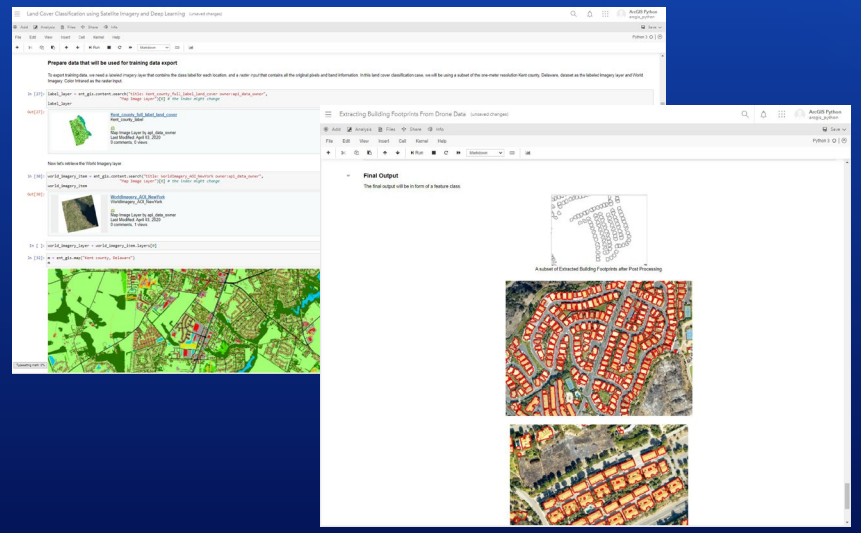
ArcGIS Notebooks

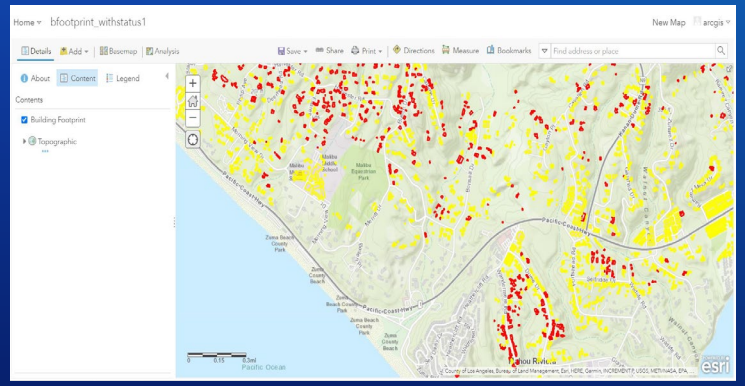
ArcGIS Notebook Server

ArcGIS Image Server

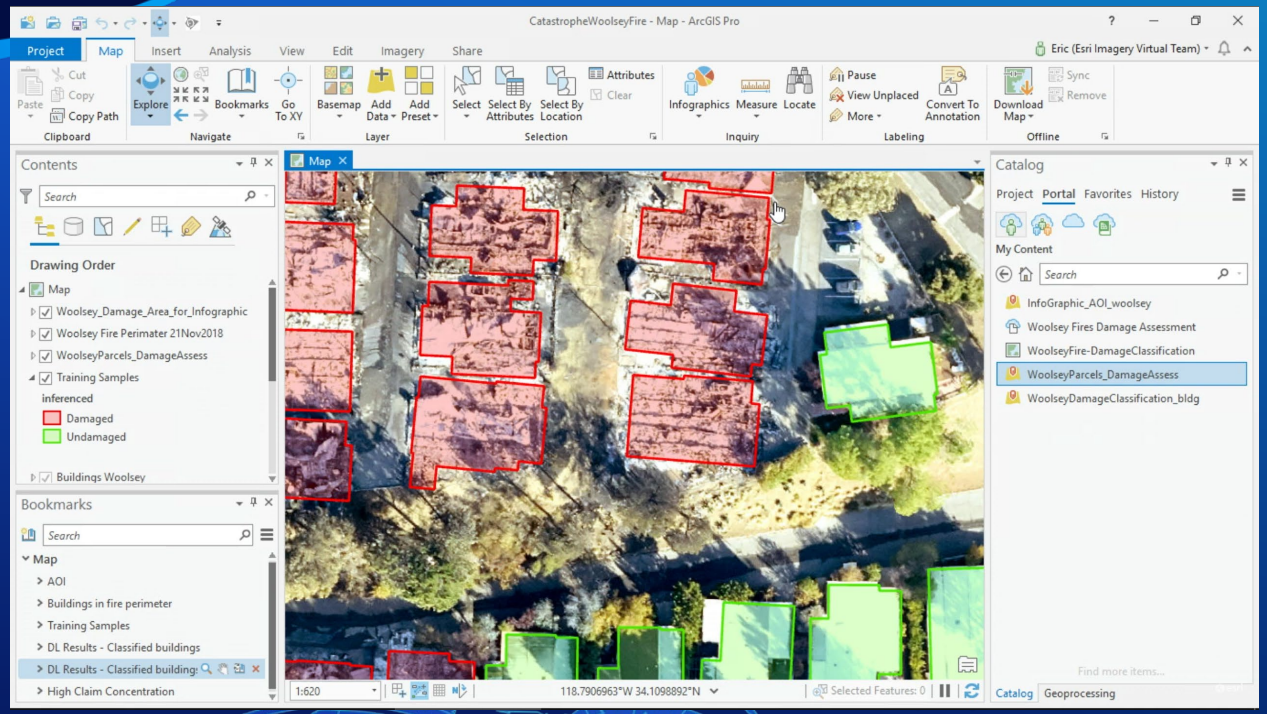
ArcGIS Enterprise







Demos!
All into Practice

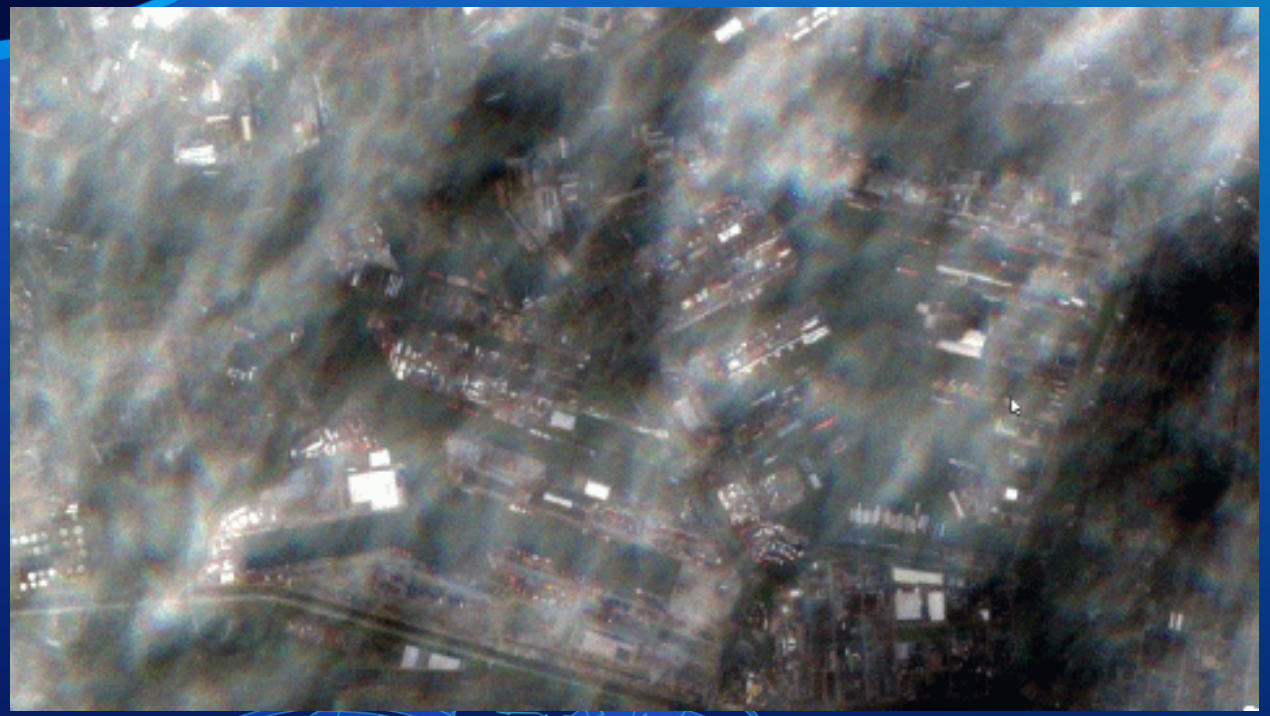


Damaged/Undamaged Building Classification

Priyanka Tuteja

Building Footprint Extraction

Priyanka Tuteja



SAR to RGB using CycleGAN

Guneet Mutreja

Land Parcels Extraction using Edge Detection models

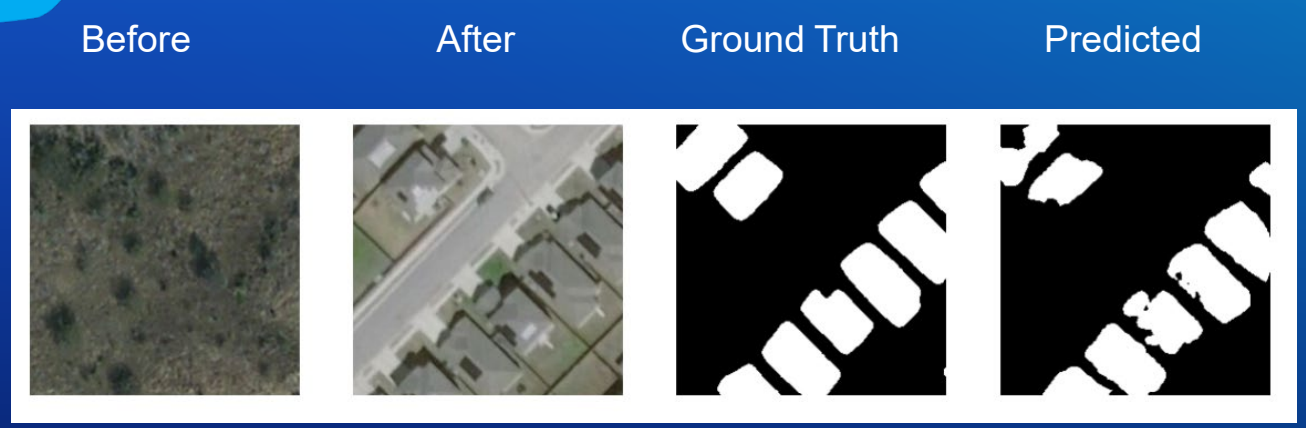
Guneet Mutreja

Roads Extraction

Priyanka Tuteja

Streams Extraction

Guneet Mutreja



Change Detection of Buildings

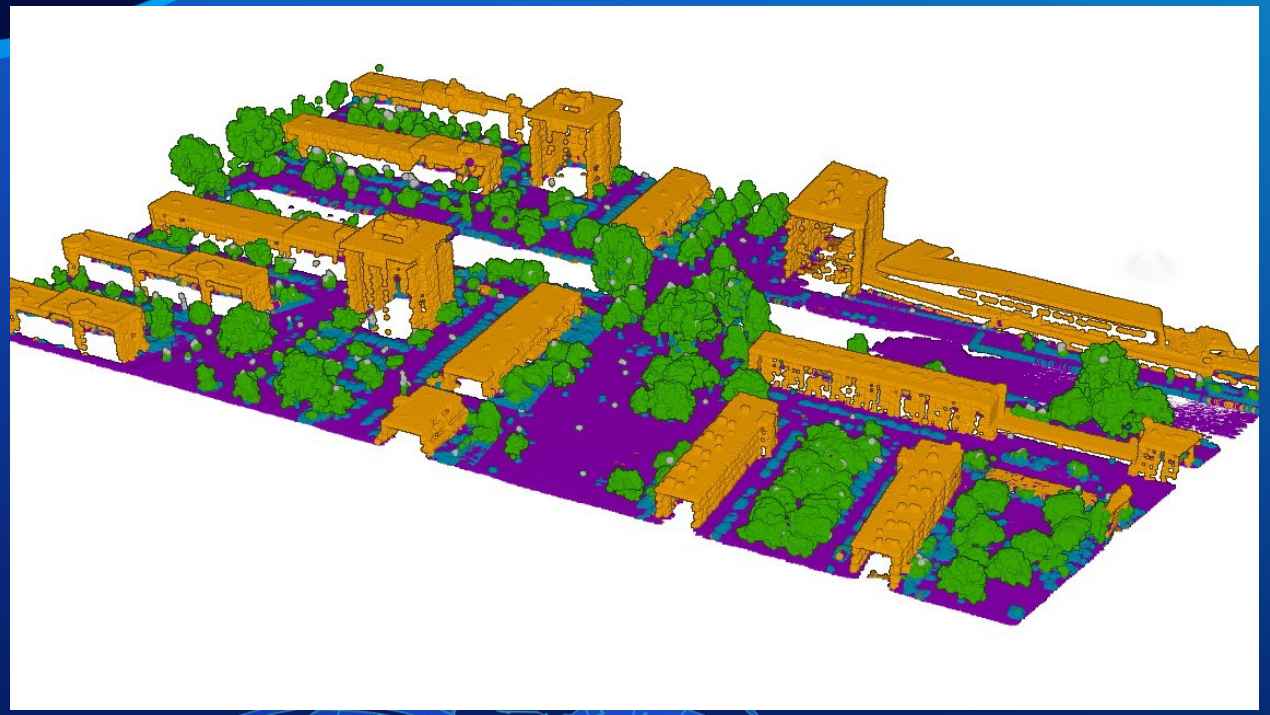
Priyanka Tuteja

Custom EMD support

Guneet Mutreja

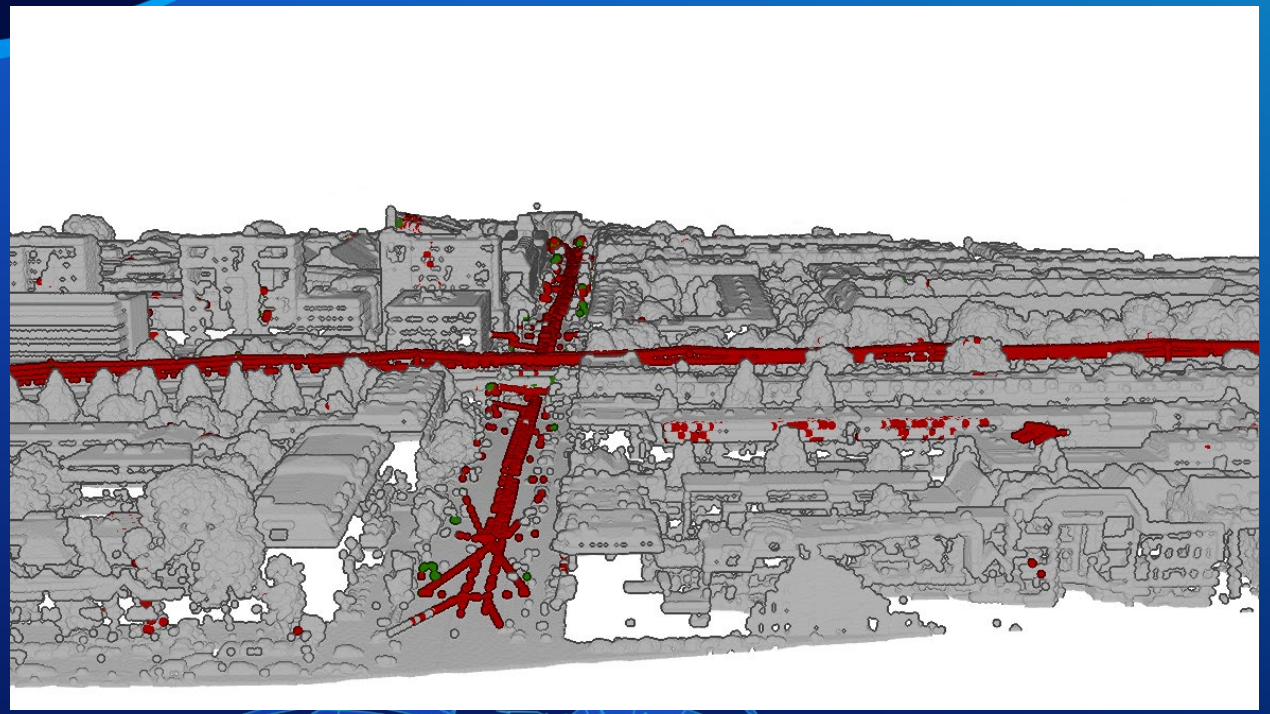
Scanned Map Digitizer

Atishay Jain



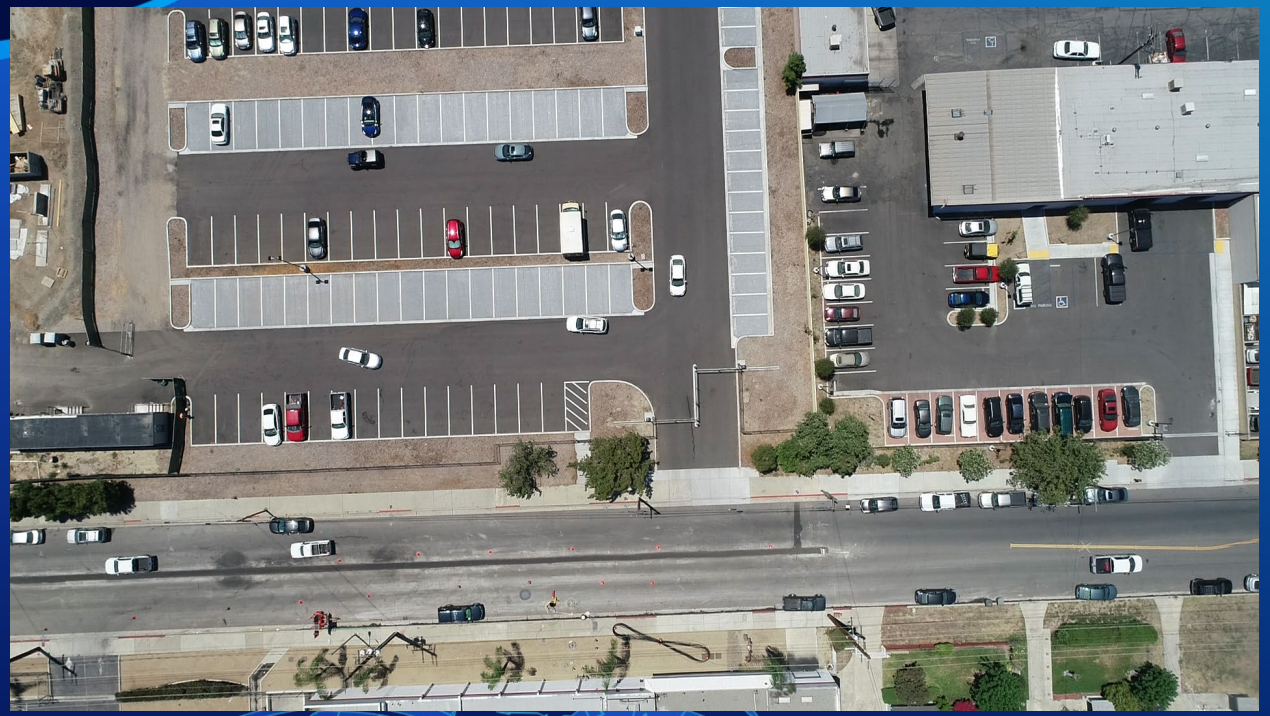
Classification of point cloud using PointCNN

Vaibhav Raj



Ready-to-use models for 3D data

Vaibhav Raj



Counting Objects using Object Tracker

Atishay Jain

Resources

- **arcgis.learn module in ArcGIS API for Python**
  - developers.arcgis.com/python
    - **Guide**
    - **Samples**
    - **API Reference**

- **GitHub Repo**
  - github.com/Esri/arcgis-python-api

- **Medium GeoAI Blog**
  - medium.com/geoai

- **YouTube Videos**
  - Search for “ArcGIS Deep Learning”

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