

Incorporating Time

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Pre- and Post-event Satellite Images for Flooded Building Identification

Detection of affected areas after disaster events, such as **earthquakes**, **floods**, or **hurricanes**.

Method

Fusion of

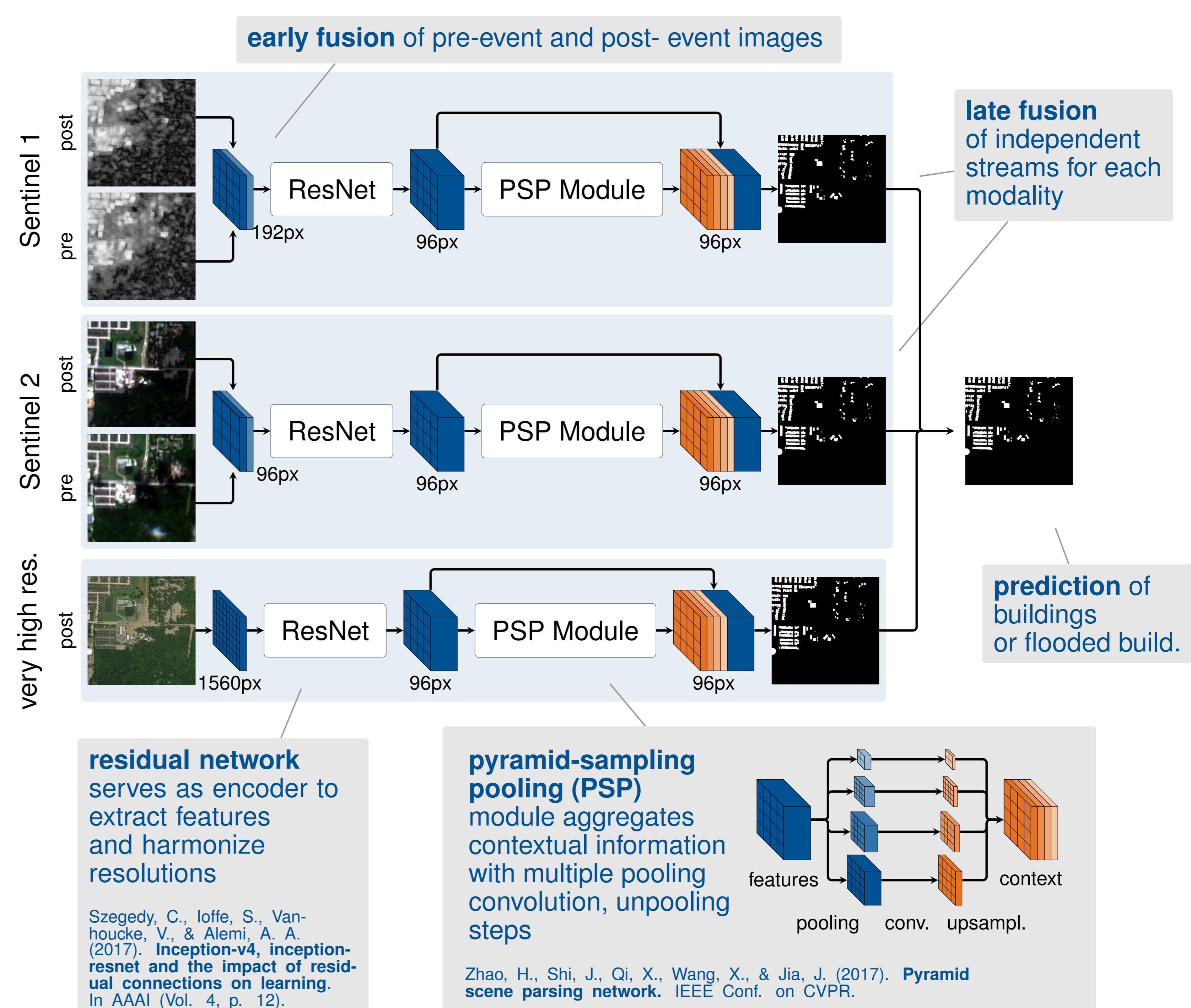
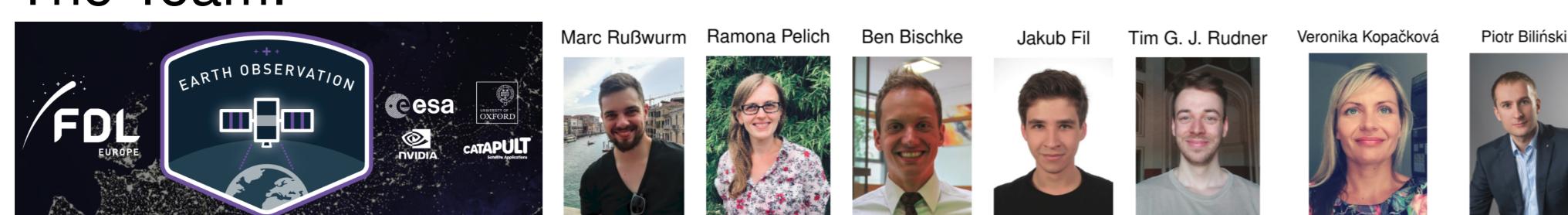
- medium resolution radar (Sentinel 1)
 - medium resolution optical (Sentinel 2)
 - very high resolution optical (VHR)
- satellite images **pre-** and **post-event** with a **multi-stream neural network**

Results

Building footprint segmentation in Houston, Texas, with different modalities.

Modality (Satellite)	mIoU	bIoU	Accuracy
S1	69.3%	63.7%	82.6%
S2	73.1%	66.7%	85.4%
VHR	78.9%	74.3%	88.8%
S1 + S2	76.1%	70.5%	87.3%
S1 + S2 + VHR	79.9%	75.2%	89.5%

The Team:



Dense Time series for Vegetation Monitoring with Recurrent Networks

Recurrent Neural Networks

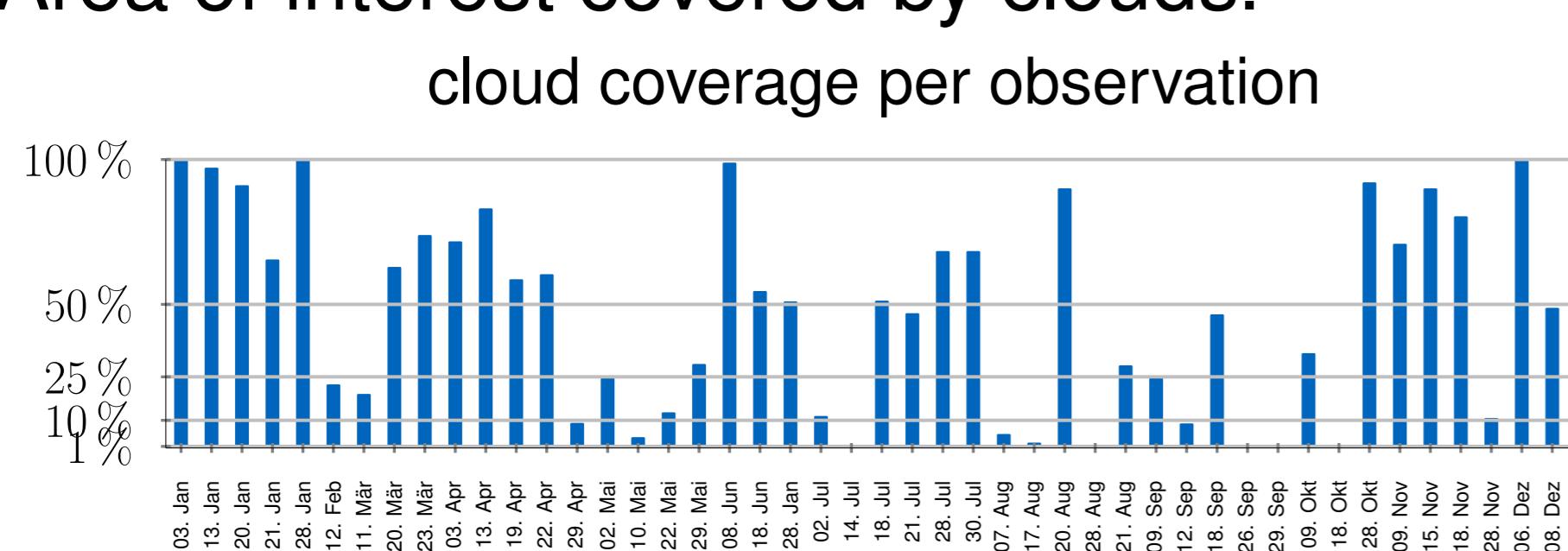
learn patterns in sequential data.

Application

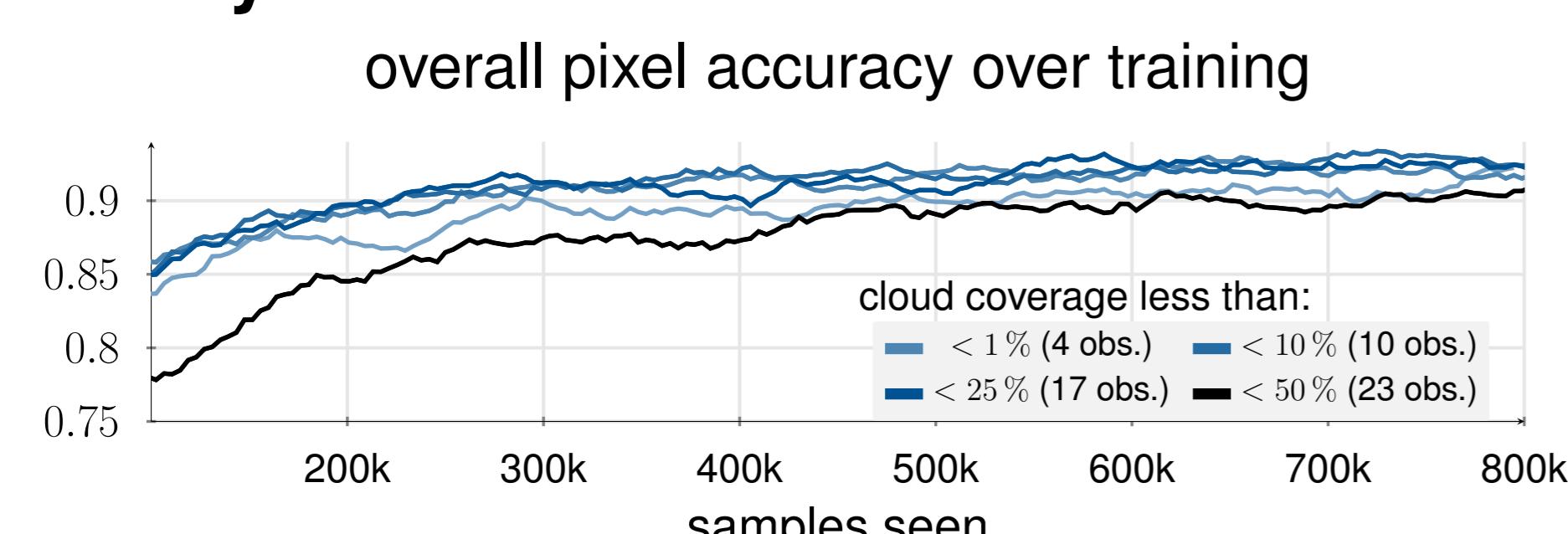
We insert a **sequence of satellite images** to learn **vegetation life cycle** events for field crop identification.

Automatic Cloud Filtering

Area of interest covered by clouds.



We trained the network on **cloudy** and **non-cloudy** datasets.



Similar accuracy on data with clouds, due to some cells having learned cloud masking from provided data.

