WEATHER FORCAST USING CLOUD IMAGES

• Dataset: Training

SWIMSEG dataset
1013 cloud images (many kinds of cloud and sky)

• Dataset: Testing

HYTA Dataset
32 cloud images (many kinds of cloud and sky)

• Architecture

Training

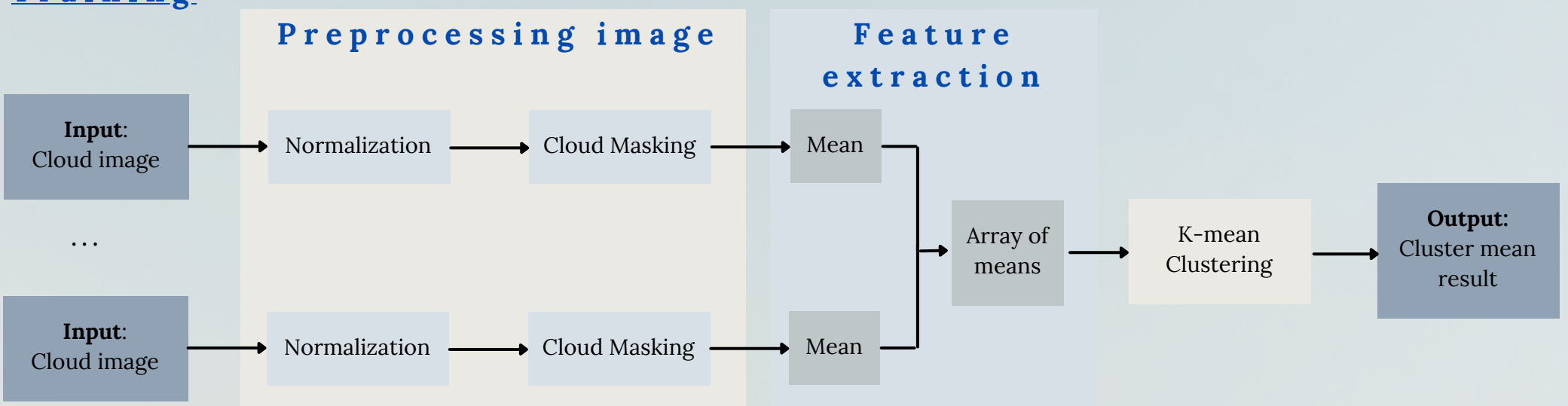
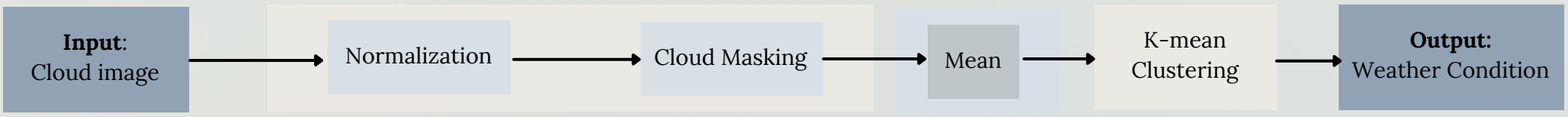


Image Processing Techniques

- Normalization: **Grayscale**
- Cloud masking: **Thresholding & Morphology (Closing)**
- Mean: average image
- K-mean clustering: 3 clusters (weather conditions)

Testing

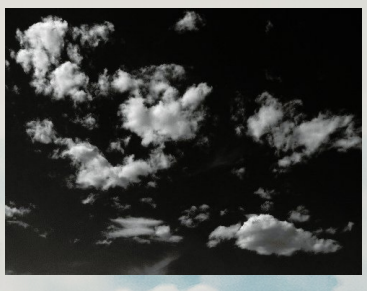
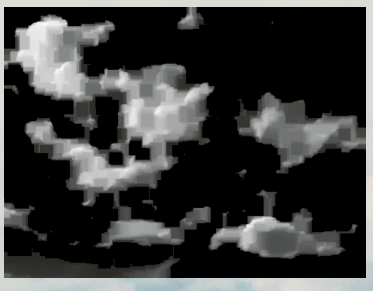


Output

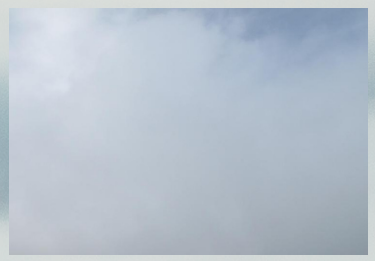
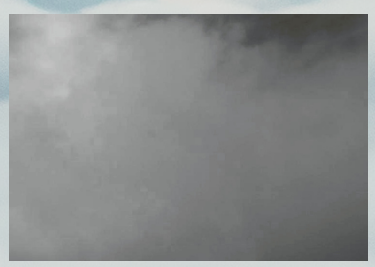
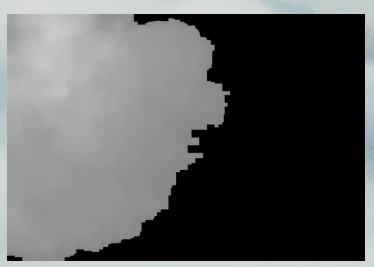
- Weather condition: Euclidian distance

• Result analysis:

Cluster mean result = [[59.346], [112.251], [175.905]]

mean = 121.511 **Cluster 1** **CLOUDY**

mean = 157.222 **Cluster 2** **HIGH CHANCE OF RAIN**

If we use preprocessed images for training and testing, we will get 78.125% accuracy of weather prediction, which is higher than using normal images with 62.5% accuracy.

SWIMSEG dataset: https://dataverse.harvard.edu/
HYTA Dataset: https://github.com/Soumyabrata/HYTA/tree/master/images
Code: https://github.com/Zeno-PT/WeatherForcast

Team Member:
6231343821 Peeranath Theerawatanachai
6231356021 Vorapon Kunakornkobkij