Lightning Event Classification with Deep Learning

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### **Progress report:**

- Created per sequence image masks (Nuke)
  - %20 (48397/246423 images) / 110 events) including augmented data
- Selected a method to determine the duration of a strike and present the ev
- Trained networks
  - U-net
  - DeepLabV3
  - Segnet
  - Alexnet
  - FCN8s
- Created a filter that averages the pixels that are below a threshold to reduce noise in dark regions
- Tested the augmented data and added it to the dataset
- Removed problematic data from the training dataset
- Integrated the directionality and event information tools into the application
- Modified the segment script to allow calls from the training script
- Added event details to segment app
- Working on graphics for the open day
  - Network
  - Cluster technique
  - Overall system diagram
  - Videos
  - Overall segmentation example
- Working on open day poster
  - System diagram
  - Network metrics
  - Colour and layout
  - Methodology

## Agenda:

# Problems:

- No LSTM
- False detection -> Effects the event segmentation
  - Using a pixel count threshold to compensate is this good enough?
- Low/high variance in data

#### Plan for next week:

- Finish the poster and presentation video
- Print the poster
- Setup for open day
- Metric evaluation
- Write reports