

Autonomous Aerial Assistance for Search and Rescue

Team F

Progress Review 11

April 5th, 2017



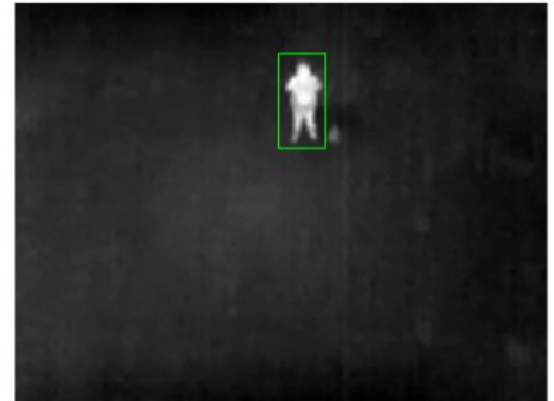
Tasks

- Investigate and Resolve issues with bounding boxes on RGB/Thermal
- Investigate and Resolve GPS location estimation issues
- Integrate GPS estimation with Signature detection
- Processing Pipeline
- Code migration to Python

Thermal and RGB algorithm integration

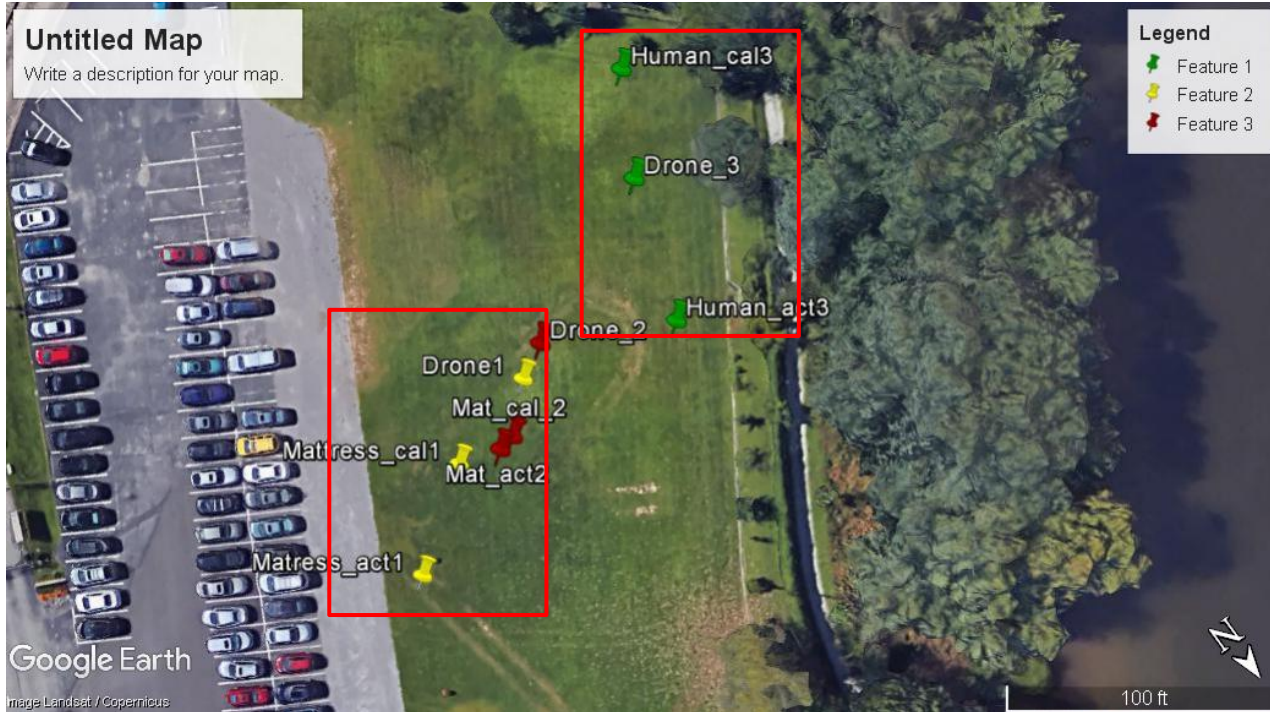
- Modification
 - Add drifts for mapping the ROIs in Thermal and RGB images
 - Integrate the ROIs from both the algorithms
- - Pixel position of both human and bright signature
 - Timestamps which are in accordance with the position info
 - Images with human bounding boxes
 - Save the RGB and Thermal data in two separate folders

```
RGB/00145.bmp 11:24:02.133 1524 63 B
RGB/00146.bmp 11:24:02.167 1545 84 B
RGB/00147.bmp 11:24:02.200 1578 122 B
RGB/00148.bmp 11:24:02.233 1611 160 B
RGB/00149.bmp 11:24:02.267 1632 198 B
RGB/00150.bmp 11:24:02.300 1642 238 B
RGB/00151.bmp 11:24:02.333 1645 267 B
RGB/00152.bmp 11:24:02.367 1589 356 H
RGB/00152.bmp 11:24:02.367 1663 312 B
RGB/00153.bmp 11:24:02.400 1602 396 H
RGB/00153.bmp 11:24:02.400 1667 345 B
RGB/00154.bmp 11:24:02.433 1607 414 H
RGB/00154.bmp 11:24:02.433 1658 369 B
RGB/00155.bmp 11:24:02.467 1635 392 B
RGB/00156.bmp 11:24:02.500 1612 410 B
RGB/00157.bmp 11:24:02.533 1532 392 H
```



Investigate and Resolve GPS location estimation issues

Issue discussed last time:



Investigate and Resolve GPS location estimation issues

Issue discussed last time:

- Did rigorous checks to ensure algorithm is correct
- Confirmed that heading calculation was correct
- Verified end-to-end

Investigate and Resolve GPS location estimation issues

Issue discussed last time:



Investigate and Resolve GPS location estimation issues

Further testing:

Did not face GPS logging issues but in camera synchronization

Processing Pipeline



Flight Subsystem

Process

Flight Path

SigDetect Subsystem

Process

RGB

Thermal

Sound

Rescue Subsystem

Process

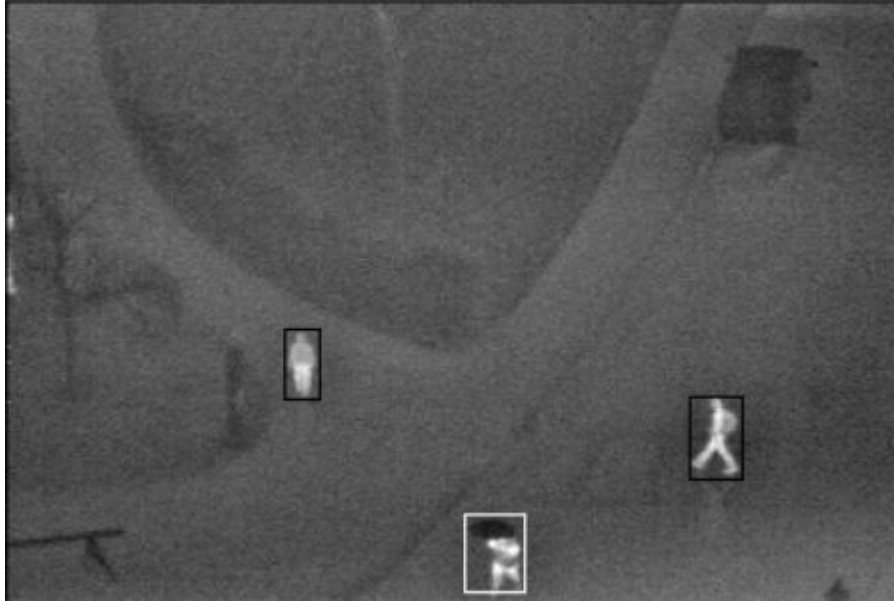
Rescue Location



[Processing pipeline](#)

Code migration to Python

- Thermal detection algorithm is finished



Thanks!