DRONES FOR HUMANITY

Team Members' Positions

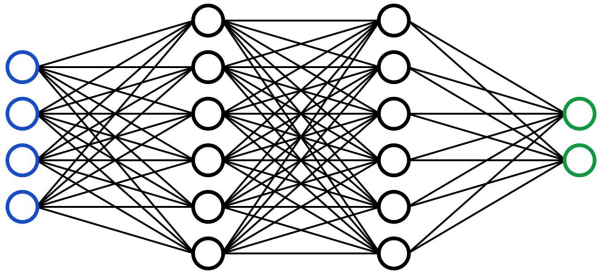
Name	Email	Position
Michael Mascari	mmascari2017@my.fit.edu	Programmer (Computer Vision/AI)
Ballard Barker	bbarker2017@my.fit.edu	Project Manager/ Structures
Matthew Backert	mbackert2017@my.fit.edu	Systems Engineer
Nicholas Davis	davisn2017@my.fit.edu	Avionics/ Propulsion/ Aerodynamics
Brendan Sanders	bsanders2017@my.fit.edu	Production/ Structures
CJ Gagni	cgagni2019@my.fit.edu	Avionics
Justin Williams	justin2017@my.fit.edu	Propulsion
Hamdan Alblooshi	halblooshi2016@my.fit.edu	Propulsion

Faculty Advisor and Client

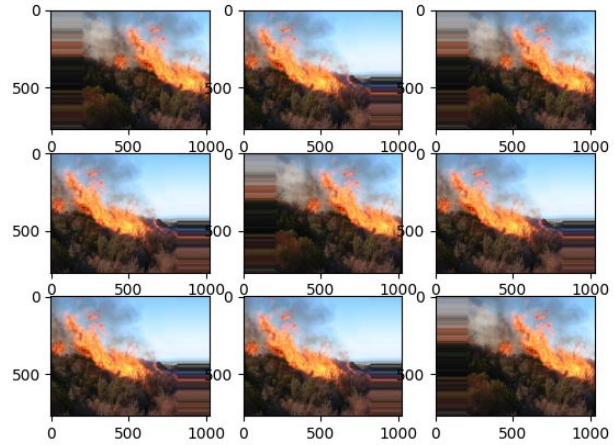
- The CS faculty advisor for this project is Dr. Debasis Mitra
- The client for this project is the project team
- Client meetings on Fridays at 10AM

Milestone 3

Test Database



Upgrade Neural Network



Data Augmentation

Task 1 - Database

- Given access to the Corsican database
- “includes men” tag did not have a complete set
- Included thermal and RGB images

Task 2 – Neural Network

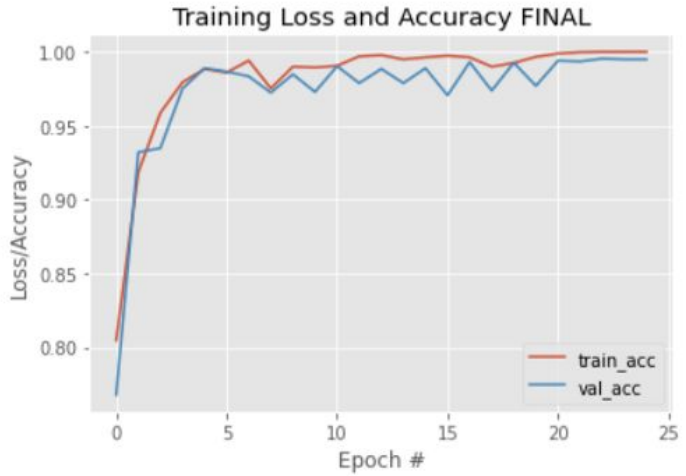
LeNet Model:

- Layer 1: convolutional layer with 20 5x5 filters and a 2x2 max pooling layer
- Layer 2: convolutional layer with 50 5x5 filters and a 2x2 max pooling layer
- Layer 3: convolutional layer
- Layer 4: fully-connected layer
- Layer 5: softmax classifier

```
[1.]]
              precision    recall  f1-score   support

         0.0       0.99      1.00      0.99      1370
         1.0       1.00      0.99      0.99      1354

    accuracy                           0.99      2724
   macro avg       0.99      0.99      0.99      2724
weighted avg       0.99      0.99      0.99      2724
```



Task 3 - Data Augmentation

Shift the images slightly to create a “new” image so the NN has more data to train with.

Milestone 4

- Ensemble methods - Several Neural Networks, average classification is the determination
- Find a better dataset to compare against the Corsican Database