Satellite images usually cover large area that will have various classes ( grass , land , buildings , … ) . So large area what contains various classes will be seen as the single pixel , So to obtain the exact location of the different classes in the single pixel this project is proposed and developed

In the first phase of the project soft classification of the image is done , soft classification is the identification of the spectral components of the image and various soft classified image for the different classes in the image are obtained .

In the second phase of the project each class image after soft classification is taken and SPSAM (Sub Pixel Spatial Attraction Mapping ) is done using calculating Attraction between neighbouring pixels after this correlation between sub pixels are calculated and PSO(Particle Swarm Optimization ) is applied for each soft classified class image

In the third phase of the project results of all the classes after PSO(Particle Swarm Optimization) is merged and after that ACO (Ant Colony Optimization ) is applied for all the soft classified images and results of all the class images are combined .Results of the ACO(Ant Colony Optimization) and PSO(Particle Swarm Optimization) are compared .

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | SPEED | UNCLASSIFIED | EDGES | Image Accuracy |
| **PSO(Particle swarm Optimization)** | Fixed | Very less | Not accurate | 98% |
| **ACO(Ant Colony Optimization)** | Not fixed | More | Accurate | 85% |