AI/ML based area classification

About Vricon
Vricon serves the global professional geospatial market with world-leading 3D geodata, 3D visualization solutions, and 3D image processing solutions. We're on a mission to build the Globe in 3D—a revolution in GEOINT tradecraft—that offers decision makers and analysts the entire world in highly accurate, immersive 3D. Vricon's customers are varied and come from the telecommunications, emergency response, defense, and intelligence communities.

We are searching for the best and brightest to join a culture that is open and flexible, inclusive and positive. We offer opportunities for growth and the ability to work with talented people who make a real difference for our clients.The majority of our research and development work is done in our Linköping office in Sweden, which employs about 40 engineers who work on cutting-edge technology to produce unparalleled, global, precise 3D geospatial data and software.

The Thesis

Digital surface models (DSM) are the main product of Vricon. A DSM describes the world as it's seen by the camera, in this case the onboard camera on the satellite. Using AI methods, Vricon performs image classification on these 3D models currently with classes such as vegetation, buildings, roads, grassland and barren ground.

It would be of great interest to investigate if the 3D model could be further divided into higher order classes, such as dessert, dense-urban, suburb, airport, golf course, etc. The thesis should investigate if a high detailed classification could be used to train a low level area classifier, either using detailed classification as input or to generate training data.

Qualifications
Master of Science student with an interest in AI and image registration techniques. The thesis should be implemented using Keras as API and Tensorflow as backend.

Contact
Sanna Ringqvist
Manager 3D Reconstruction
Vricon Systems AB
sanna.ringqvist@vricon.com