Master Thesis – ML/AI classification of satellite images using geo-positioned training data

About Maxar

Maxar Sweden 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. Maxar'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. Most of our research and development work is done in our Linköping office in Sweden, which employs about 80 engineers who work on cutting-edge technology to produce unparalleled, global, precise 3D geospatial data and software.

The Thesis

Satellites take images of the earth which we're using to make a 3d reconstruction. These images contain a lot of information which could be utilized better in the reconstruction process, e.g. buildings and roads often follows some surface criteria. To use the information in the image, apart from the stereo matching, a semantic classification is handy. Today Maxar Sweden only has cloud and water classification as input when reconstructing the earth.

Apart from satellite image classification, Maxar Sweden has a classification product which is a LULC product generated from the 3d surface model. This classification is geo-positioned and refers to a certain area in the world. This classification or training data for this product could be used to project information back into the image-space which then could be used as training data.

Qualifications

Master of Science student with an interest in AI and image registration techniques.

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