AI/ML based Digital Terrain Model generator

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. A DTM (digital terrain model) on the other hand is describing the elevation of the ground. A DTM could be estimated/obtained from a DSM by using the right filtering techniques and discard non-ground objects. A DSM to DTM algorithm often gets complex and is hard to adapt to all kinds of terrain and vegetation at the same time, while it's sometimes easy to understand where the ground level should be.

The thesis should investigate if a DTM generator could be created using an ML process. An AI based algorithm would create a cleaner, more easily maintained and hopefully a better DTM compared to a non-AI based algorithms.

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

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