



# AI/ML based Bridge Extraction from 3D-Models

## 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

This thesis will combine AI/ML, stereo image registration, and vector representation. Vricon uses deep learning to automatically classify the content of our 3D-models. Vricon classifies and detects objects in 2D-images, extracted as an ortho view<sup>1</sup> of the 3D-model. In this thesis project, the student investigates methods for multi-view classification to get a more precise classification of bridges. The ortho view classification will be combined with classification of multi-view satellite images in order to extract a full 3D representation of objects, and bridges in particular. The aim of the thesis is to extract data, such as length, width, height, and thickness of the bridges.

## 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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<sup>1</sup> from vertically above