**ABSTRACT**

**TITLE**: AUTOMATIC DETECTION OF THE URBAN SOCIOECONOMIC STRATIFICATION LEVEL USING CONVOLUTIONAL NEURAL NETWORKS ON SATELLITE IMAGES WITH INCREASED INFORMATION.\*

**AUTHORS:** DANIEL ALCIDES CARVAJAL PATIÑO.

**KEYWORDS:** Container, Cloud Computing, OpenStack, modules and services.

**DESCRIPTION:** A level of prediction was obtained using semantic segmentation for a dataset of satellite images from Bogota city. The dataset was named OVERLAECOBO and was created with information from the maps web page of Bogotá. OVERLACOBO have 3 types of satellite image, SIMPLE, COMPUND and LABEL, The SIMPLE image is RGB satellite image, the COMPOUND image are image with 4 channels, RGB + extra information, in this case the night danger for the women and the LABEL image are color maps where a color is a class for the prediction. The metric IoU (Intersection over Union) is used for determining the quality of predictions. The maximum IoU of the different test was 0.34 and the model used for this value was FC-DenseNet56 with a value of 70 for epoch and 1 for batch-size. The test was elaborated with the Framework Semantic-Segmentation-Suite of the GitHub user @GeorgeSeif.