TRAFFIC SIGN RECOGNITION USING CONVOLUTION NEURAL NETWORK WITH RTMAPS &BLUEBOX

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Introduction

The goal of this project is to establish a neural network in RTMaps-embedded python block to identify the traffic sign board from the input images given

- We used German traffic sign dataset of ~39000 images for training.
- The trained neural network is added to the python block of RTMaps-embedded.
- The model created as RTMaps component is classifying the input traffic sign to one of the 43 classes.

Working setup

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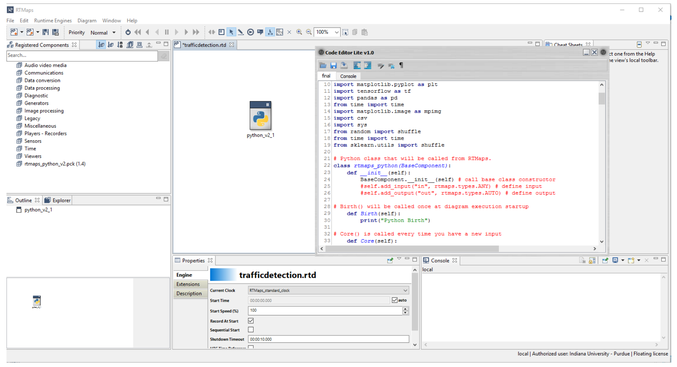
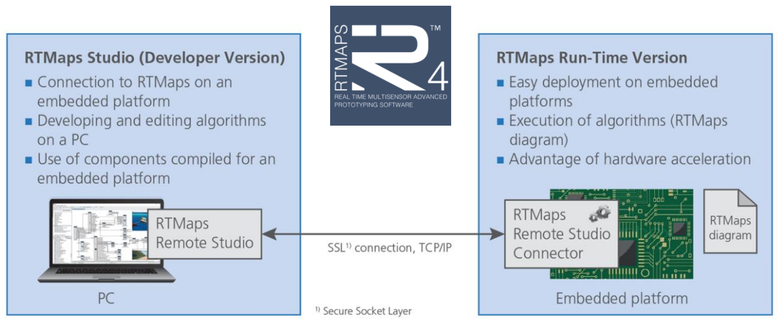
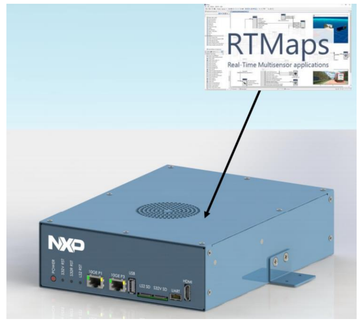
- Implementation of CNN on PC (Ubuntu 16.04LTS)
- Implementation of CNN on RTMaps studio (Simulation)
- Implementation of CNN on RTMaps runtime engine and BlueBox. (Hardware)



System Requirements

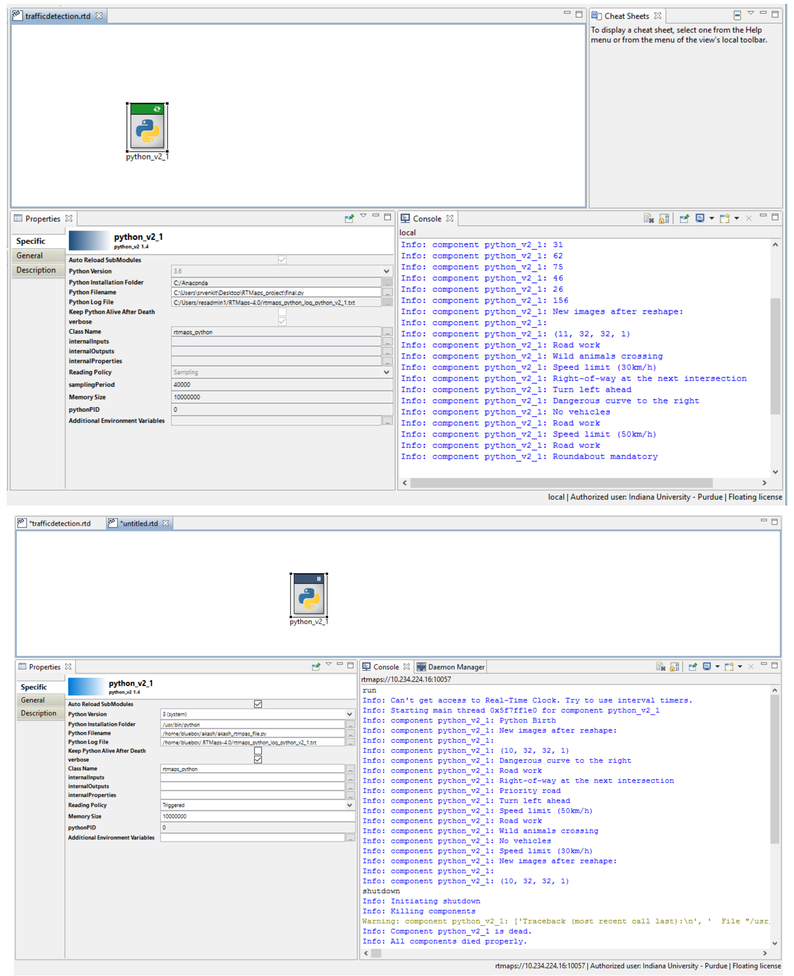


RTMaps – Embedded 4.5.0



Bluebox 2.0

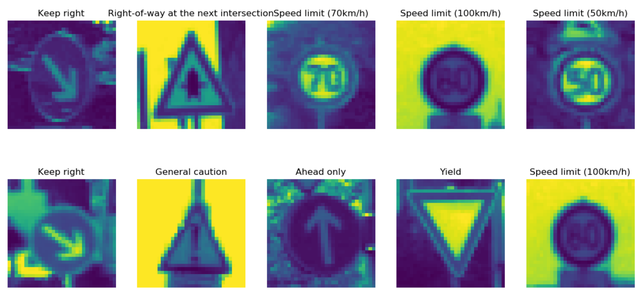
Results



Implementation

- Implementation of CNN on PC (Ubuntu 16.04 LTS)
- Implementation of CNN on RTMaps studio (Simulation)
- Implementation of CNN on RTMaps runtime engine and BlueBox. (Hardware)

Results



Conclusion & Discussion

- The Convolution neural network is trained with the around 39,000 German traffic data set. After the training, it is then added to the python block of RTMaps-Embedded. The images are categorized to 43 classes. Once the model is created as RTMaps component, it classified the input traffic data sign to one of the 43classes.