1 Abstract

With this project, we collect and estimate ground traversability for a no-wheel crocodile-like robot. We move the robot in a simulated environment recording its pose. Later, we crop for each height map used to generate the ground a patch such as it includes booth the robot in the center and its footprint in the case of maximum advancement.

Our approach is based on an already existing methodology that we further expanded with a smaller deep convolutional neural network based on residual connection and the squeeze and excitation operator. The network is unaware of the robot's locomotion and physical characteristics. Then, we evaluate the results by visualizing different datasets and custom patches using GRAD-CAM to highlight and discover the strength and weakness of the model.

2 Introduction

Effective identification of traversable terrain is essential to operate mobile robot in the enviroment.