

Deep Learning Ongoing Research and Programming Tools.

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Current Research Areas

Gaming

Natural language processing

Machine-Human Interface

Autonomous Navigation

Programming tools- (Python libraries)

Caffe : Caffe itself isn't a Python library, it does provide bindings into the Python programming language

Theano : for those who like low level programming

Tensorflow : A primary benefit of TensorFlow (as compared to Theano) is distributed computing, particularly among multiple-GPUs.

Lasagne : Lasagne functions as a happy medium between the low-level programming of Theano and the higher-level abstractions of Keras.

Programming tools- (Python libraries)

Keras : Keras can use either Theano or TensorFlow as a backend. The primary motivation behind Keras is that you should be able to experiment fast and go from idea to result as quickly as possible.

Mxnet : it takes a little more code to get an experiment up and running in mxnet (as compared to Keras), but if you're looking to distribute training across multiple GPUs or systems.

Sklearn- theano : This is especially useful in situations where you don't have enough data to train a full CNN from scratch.

Programming tools- (Python libraries)

Nolearn : While Keras wraps Theano and TensorFlow into a more user-friendly API, nolearn does the same — only for Lasagne.

Chainer : Chainer supports CUDA computation.
It only requires a few lines of code to leverage a GPU.
It also runs on multiple GPUs with little effort.

Famous CNN model

Alexnet

VGGnet

Googlenet

Resnet

My study: Autonomous Navigation system

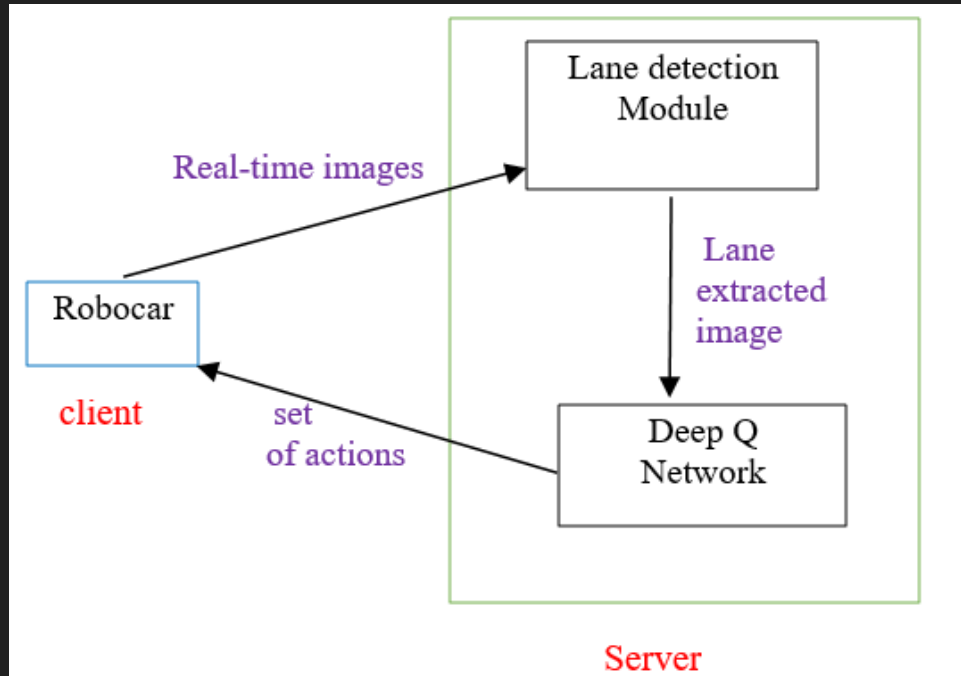
Challenges:

Safety

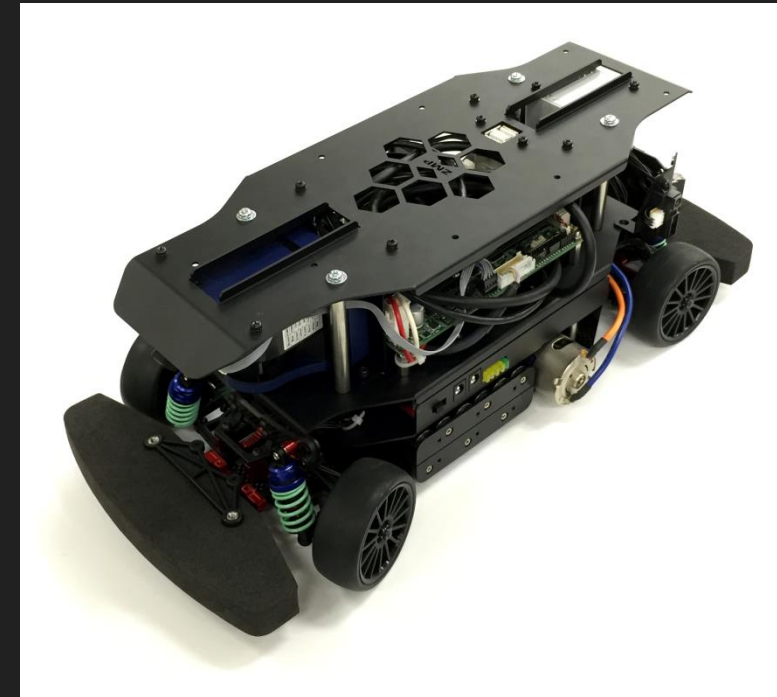
Environment

Cost control

My study: Autonomous Navigation system

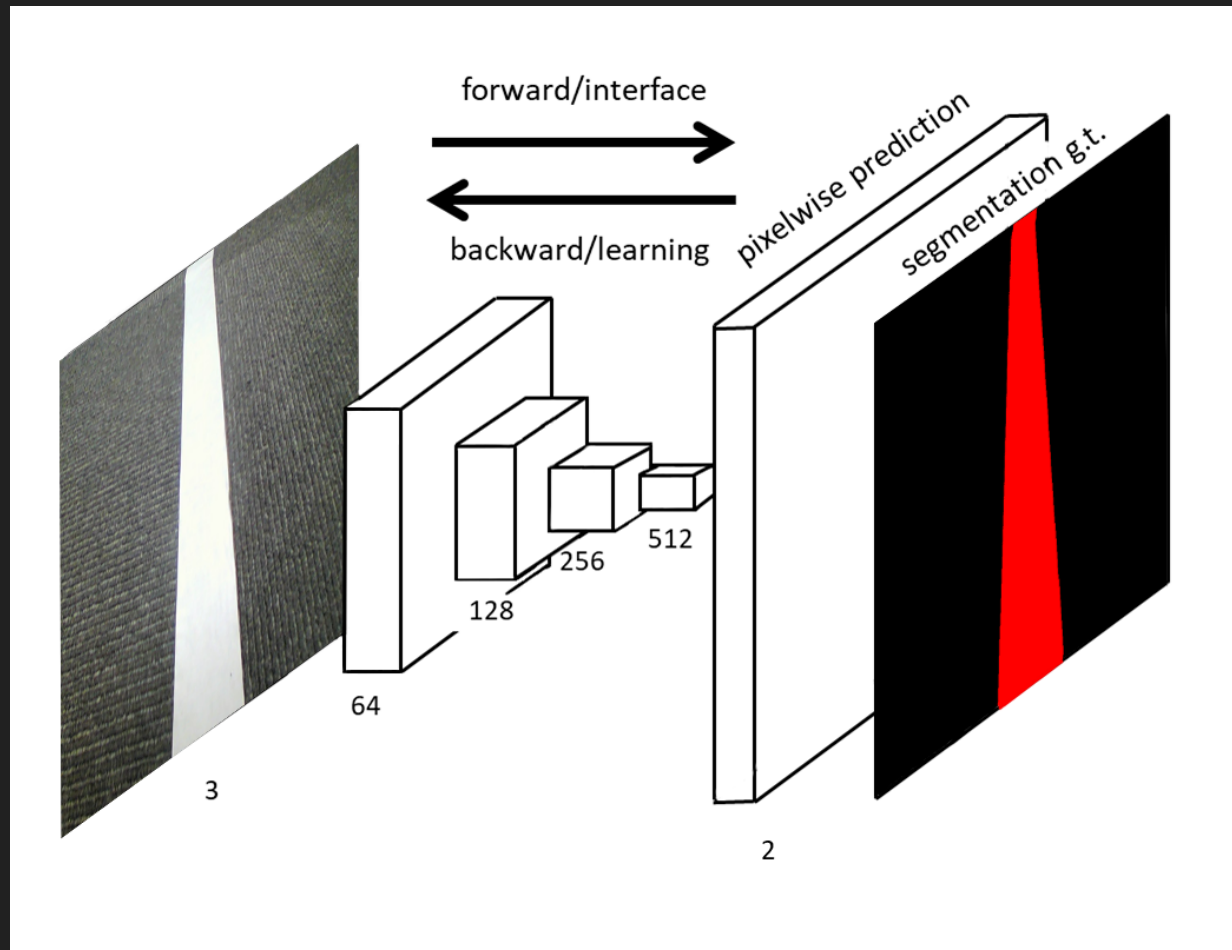


Autonomous Navigation System

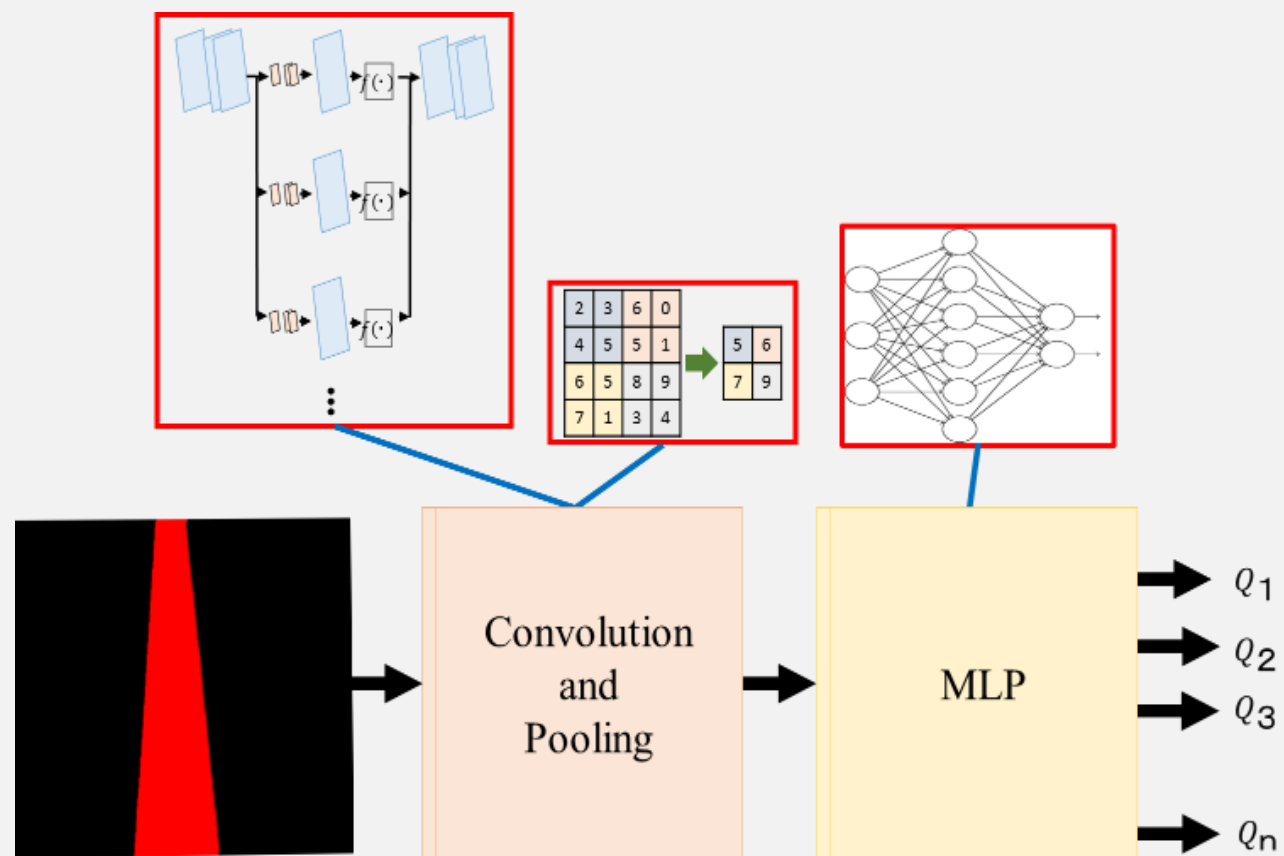


Zmp Robocar1/10

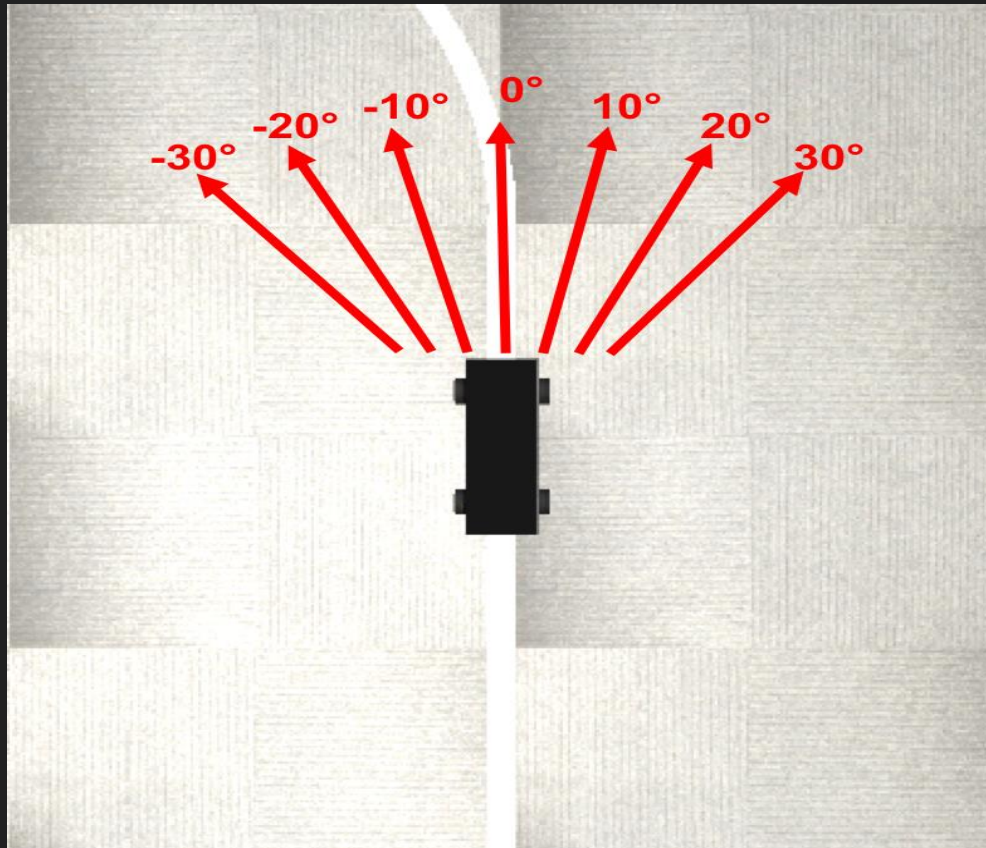
Semantic segmentation



Deep Q Network



Set of Actions



Demonstration video

- VID_20171211_181627.mp4
- <https://www.youtube.com/watch?v=utFbV41ZijM>
- <https://www.youtube.com/watch?v=Fxf5EfwgoQU&feature=youtu.be>