Force Prediction using OCT Sensor Data by Linear Regression, CNN and RNN

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Abstract. Content of this student project is to develop a model that gives information about the force acting at a needle tip while plunging it against a phantom. The purpose is to give the operator some kind of force feedback without measuring it explicitly. Input of this model is an optical coherence tomography (OCT) signal that is measured at the needle tip. Three models which are linear regression, convotional neural network and recursive neural network are considered.

Keywords:

1 Introduction

2 Measurement Set Up

3 Theory

Not sure if necessary. (Hopefully not?)

4 Models

4.1 Linear Regression

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4.2 CNN

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4.3 RNN

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5 Results

References