**Notes on the papers for CS 686 project**

**Bojarski: End to End learning**

- use convolutional neural network to obtain a steering angle just from the pixels of the front camera and training data of humans driving along the street

**Explaining how a Deep Neural Network → improvement of version 1**

**Alia: Local trajectory Planning and Tracking**

- autonomous navigation: perception, trajectory planning and actuators control (tracking)

- use empirical approach: drawing clothoid tentacles in the ego-centered reference frame related to the vehicle

- occupancy grid is used to represent the environment

- used to classify the tentacle as navigable or not

- use different criteria to choose the best among the naviagable tentacles

**Immersion and Inversion → is used for tracking, hence choose this paper too**

**Chen: Deep Driving Learning Affordance**

- use state-of-the-art convolutional neural network

- some arguments against direct / end to end approach

- new information?

Du: Self Driving Car Steering Angle Prediction

- not only but also 3D CNN

?

McAllister: Safety and Advantages of Bayes Nets

- good introduction about safety, opportunities to use for my introduction

- focus is more on other topics

**Paden: A Survey of Motion Planning and Control Techniques**

- introduces state of the art approaches for motion planning and trajectory tracking

- allegedly some comparison of the work

- good introduction, also with history

Penkov:

- two AI methods for end to end, one is also CNN

- good picture of real vs. Estimated steering angle

- new infos?

Weiers: cost function for path planning learning

- maybe too much

**Ziegler: Trajectory Planning for Bertha**

- use anyway

- optimization problem

- not really information for general introduction

Introduction of the domain:

- my bachelor thesis (first to parts of introduction)

- paden

Introduction of the domain:

- Paden, Alia for typical approach (different steps and in which order)

- few sentences about new/alternative approaches (end-to-end)

Introduction

* + What is the application domain?
  + What is the problem?
* Techniques to tackle the problem
  + Brief survey of previous work concerning this problem (i.e. the 6-10 papers that your read)
  + Brief description of any other relevant techniques
  + Analysis of techniques
    - Comparison: advantages/disadvantages, scalability, ease of use, etc
* Optional: Report on your empirical evaluation
* Conclusion
  + What is the best technique?
  + Can we solve the problem today?
  + What future research do you recommend?