

# AI1811-Deep Learning

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Lecture notes for deep learning AI-1811.

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## §1. Introduction

### §1.1. Lecture Overview

- Introduction
  - High dimensional data
  - 高维数据中的维数灾难
- Model Architecture
  - MLP
  - CNN
  - RNN
  - Transformer
- Advanced about deep learning
  - LLM reasoning
  - 凝聚现象

### §1.2. NN and Polynomial

深度学习有万有逼近定理，多项式拟合也有 Weierstrass 逼近定理。

#### **Recordings (The bitter lesson).**

The biggest lesson that can be read from 70 years of AI research is that general methods that leverage computation are ultimately the most effective, and by a large margin.

在实际情况下，我们发现神经网络的过拟合现象远小于多项式拟合。

## §2. Conclusion