

Advanced Deep Learning

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Contents

- Intro. to deep learning
- Meta learning
- Automated deep learning (AutoDL)
- Disentangled representation learning, Advanced deep generative models
- Neuro-symbolic models
- Explainable AI for deep learning
- Language and vision
- Selected papers in advanced deep learning

Contents

- Prerequisite: Deep learning
 - For students who didn't take deep learning, please first read the book extensively
 - I. Goodfellow, Y. Bengio, A. Courville, Deep learning, MIT Press, 2016
- Each of advanced topics is talked during 2 or 3 weeks
- Assignment
 - Reading recent DL papers
 - Selected papers from NeurIPS, ICLR and ICML will appear in the lecture homepage soon
 - Implementing advanced deep learning models
 - (e.g. meta learning)

References

- I. Goodfellow, Y. Bengio, A. Courville, Deep learning, MIT Press, 2016
- Kevin Patrick Murphy, Machine Learning: a Probabilistic Perspective, MIT Press, 2012
- Christopher Bishop, Pattern Recognition and Machine Learning, Springer, 2007
- I. Goodfellow, Y. Bengio, A. Courville, Deep learning, MIT Press, 2016
- D. Koller and N. Friedman, Probabilistic Graphical Models: Principles and Techniques, MIT Press, 2009