Notes Plan

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笔记计划

1. Introduction to Machine Learning
2. Mathematical Background
3. Linear Regression
4. Polynomial Regression
5. Logistic Regression - Classification Algorithm
6. Addressing Overfitting Using Regularization Techniche
7. Three Fundamental Learning Algorithms

    - Naive Bayes Algorithm
    - k-Nearest Neighbor
    - Perceptron Algorithm

8. Evaluating the Learning Models
9. Learning Theory
10. Optimization
11. Support Vector Machine(SVM)
12. Sequential Minimal Optimization (SMO)
13. Anomaly Detection via Online Over Sampling Principal Component Analysis
14. Nonlinear Dimension Reduction with Kernel Sliced Inverse Regression
15. Clustering and EM Algorithm
16. Online Nonlinear Support Vector Machine for Large-Scale Classification

教科书

- Deep Learning, Ian Goodfellow, Yoshua Bengio and Aaron Courville, 2016.

参考阅读

- Wing, Jeannette M. Computational thinking." Communications of the ACM 49.3 (2006): 33-35.
- Domingos, Pedro. A few useful things to know about machine learning." Communications of the ACM 55.10 (2012): 78-87.
- Dhar, Vasant. "Data science and prediction." Communications of the ACM 56.12 (2013): 64-73.

参考用书

- Ethem Alpaydin, Introduction to Machine Learning, 3rd Edition, 2014, ISBN: 978-0-262-028189, http://www.cmpe.boun.edu.tr/ethem/i2ml3e/
- Abu-Mostafa, Yaser S., Malik Magdon-Ismail, and Hsuan-Tien Lin. Learning from data. Berlin, Germany: AMLBook, 2012.
- Friedman, Jerome, Trevor Hastie, and Robert Tibshirani. The ele- ments of statistical learning. Vol. 1. Springer, Berlin: Springer series in statistics, 2001.
- Witten, Ian H., and Eibe Frank. Data Mining: Practical machine learning tools and techniques. Morgan Kaufmann, 2005.
- Vapnik, Vladimir Naumovich, and Vlamimir Vapnik. Statistical learn- ing theory. Vol. 1. New York: Wiley, 1998.
- Mitchell, Tom M. Machine learning. McGraw Hill,1997.

参考课程

- Machine Learning Course By Andrew Ng in Coursera or CS229, 2015
- Machine Learning Course By Hong-Yi Lee in YouTube, 2016
- Machine Learning Course By Yu-Ying Lee in YouTube, 2017
- Deep Learning Specification Courses in Coursera, 2017