

程序报告

姓名：李新锋(11224014)

Email: silferlee@zju.edu.cn

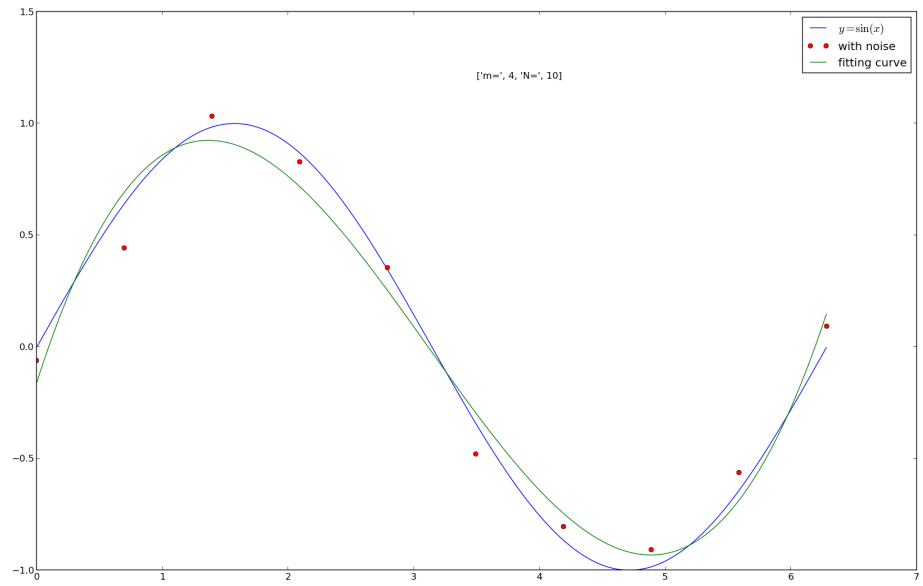
使用说明

- 程序编写环境：Ubuntu12.04 + python2.7
- 程序运行依赖包：numpy + scipy + matplotlib

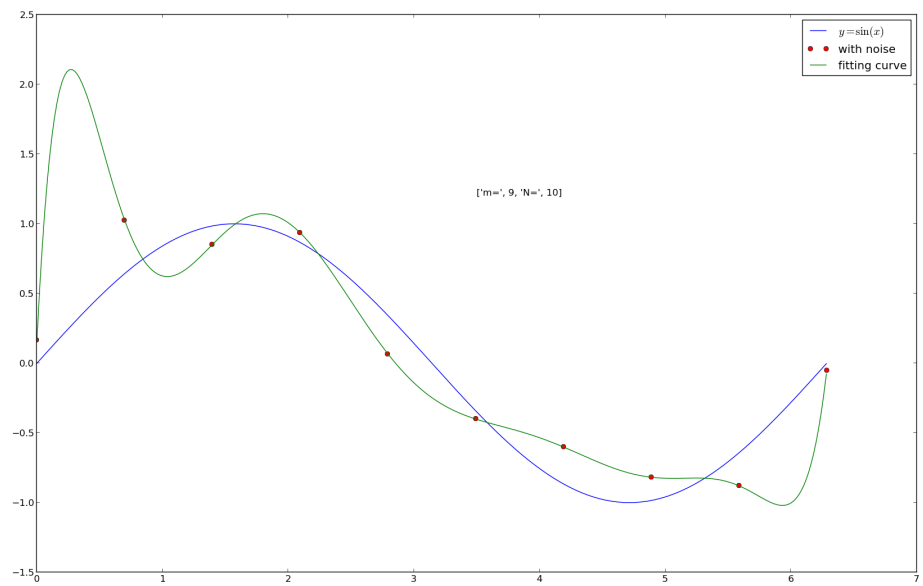
Homework01: One Dimensional Regression

- 源码: 1dregression.py
- 运行方式: python 1dregression.py
- 运行结果: 1dregression_first/figure

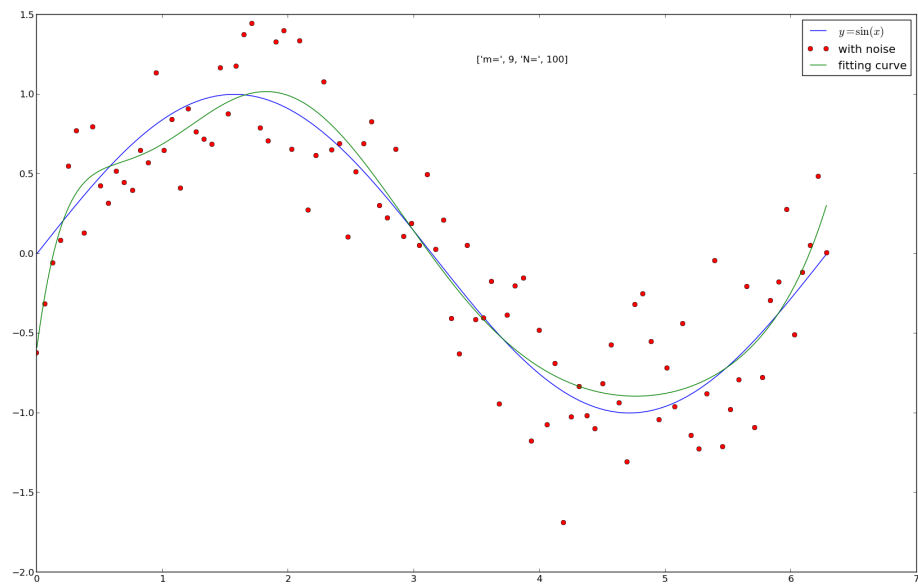
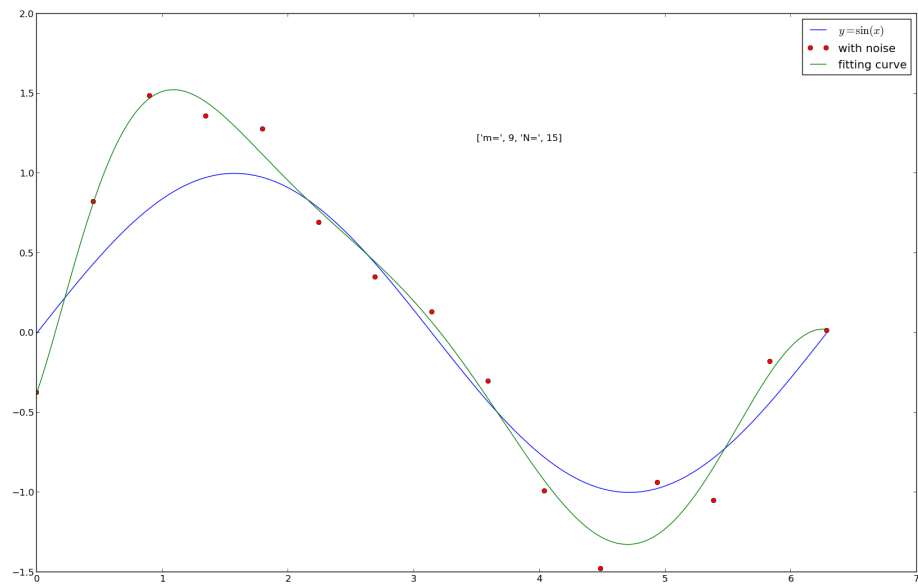
Fiting



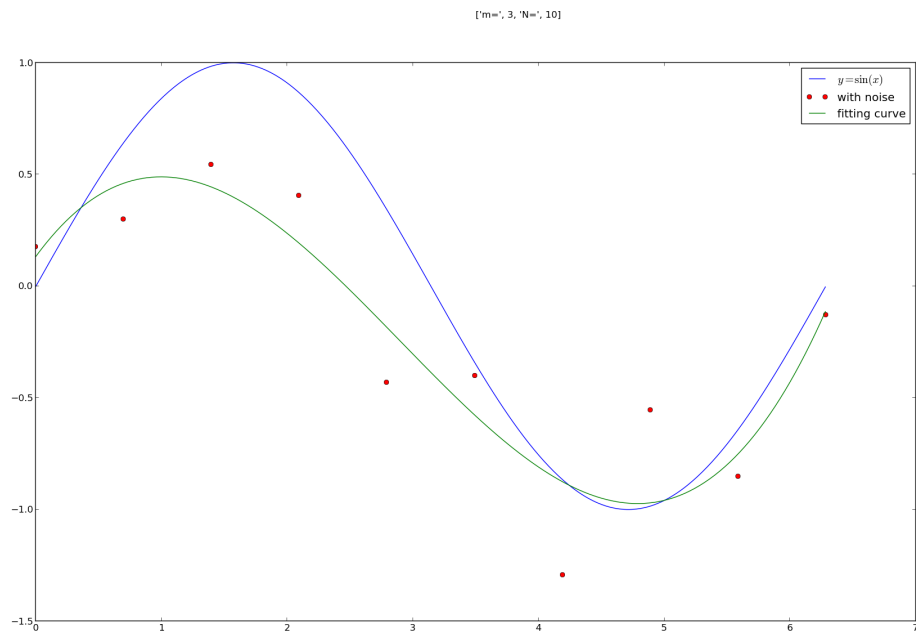
Over-Fitting



Fitting in 15 and 100 sample points



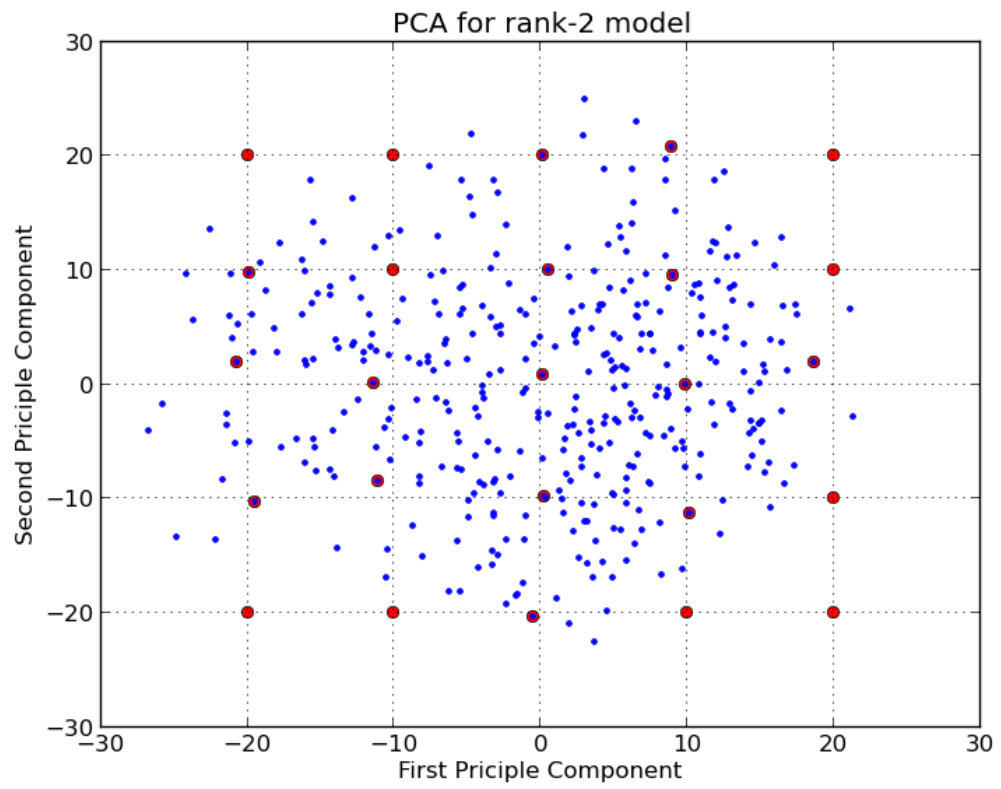
Fitting with regularization term $\ln \lambda = -18$



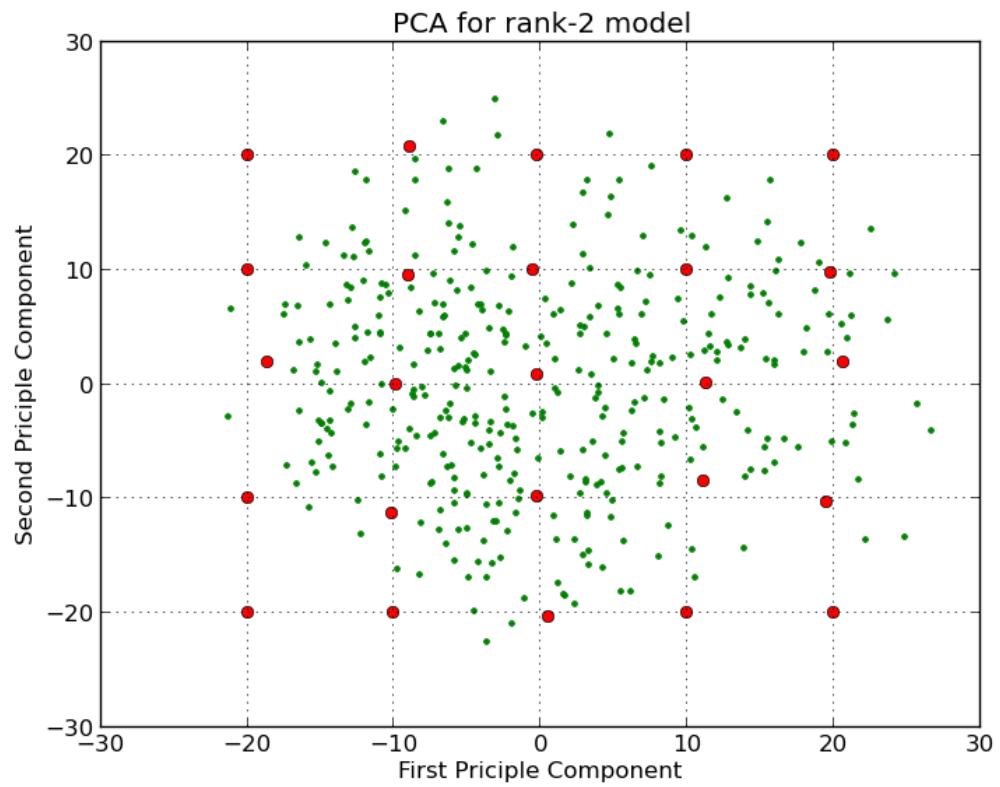
Homework02: PCA Algorithm

- 程序源码: PCA_algo.py (not using SVD) && PCA_SVD_algo.py (using SVD)
- 运行方式: python PCA_algo.py(PCA_SVD_algo.py)
- 运行结果: PCA_algo.png && PCA_SVD_algo.png

PCA_algo.png



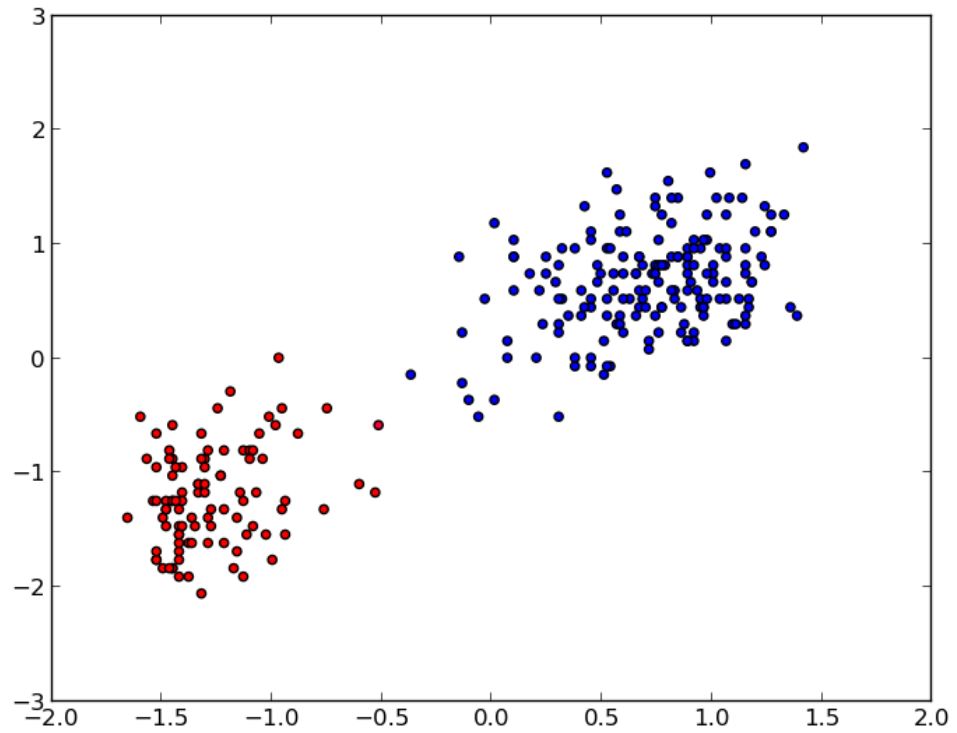
PCA_SVD_algo.png



Homework03: EM Algorithm

- 程序源码: EM_algo.py
- 运行方式: python EM_algo.py
- 运行结果: em_algo.png

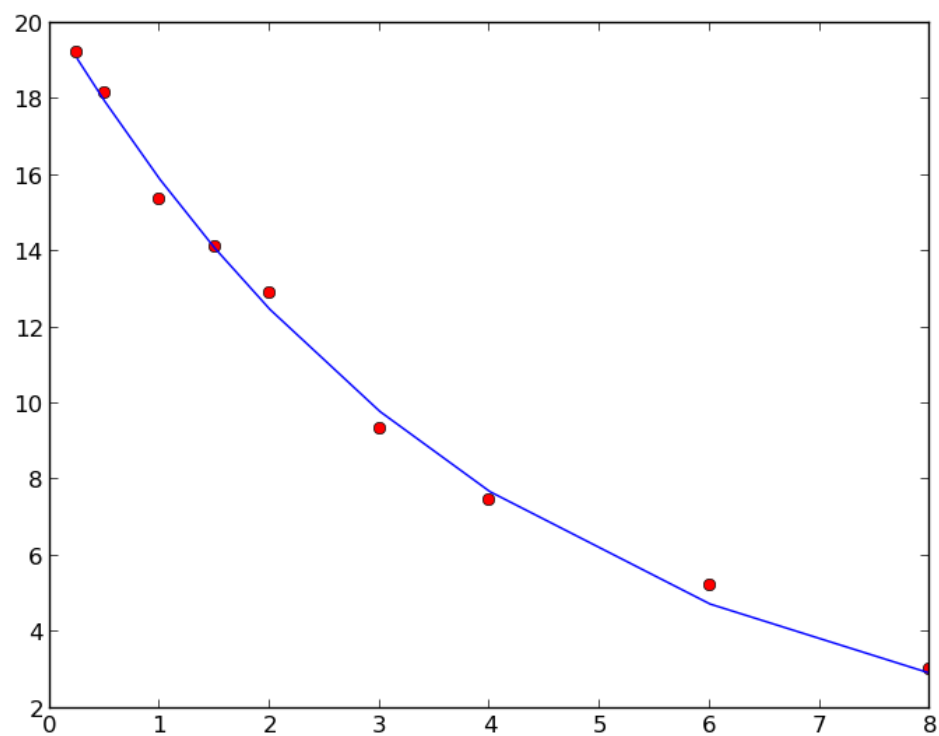
em_algo.png



Homework04: LM Algorithm

- 程序源码: LM_algo.py (in fact, using LM algorithm to fitting)
- 运行方式: python LM_algo.py
- 运行结果: LM_fitting.png

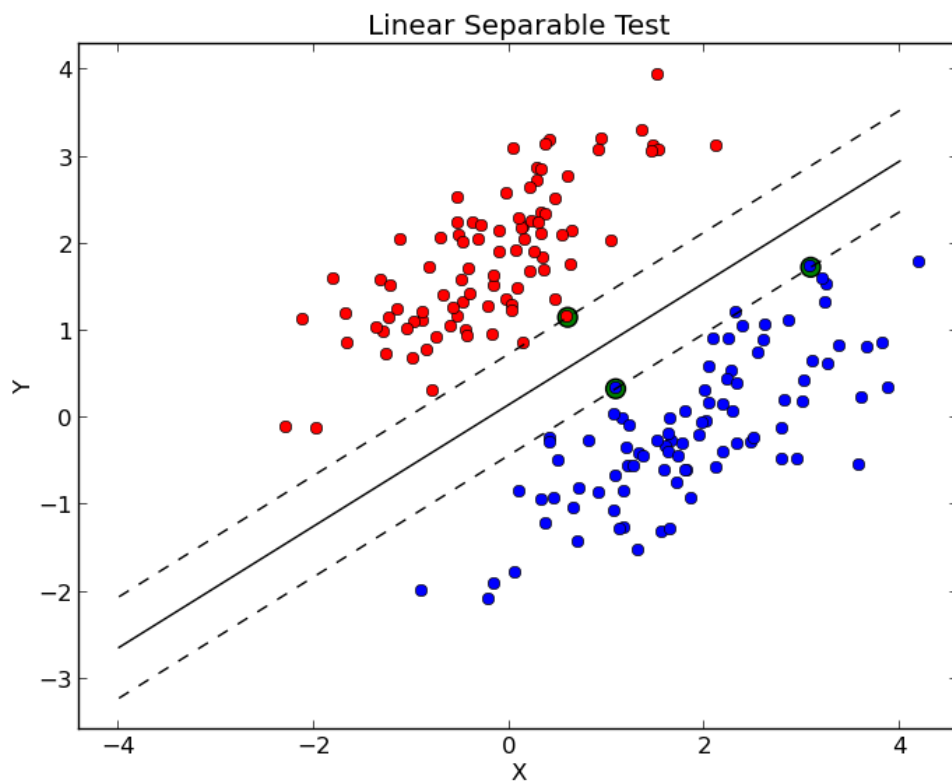
LM_fitting.png



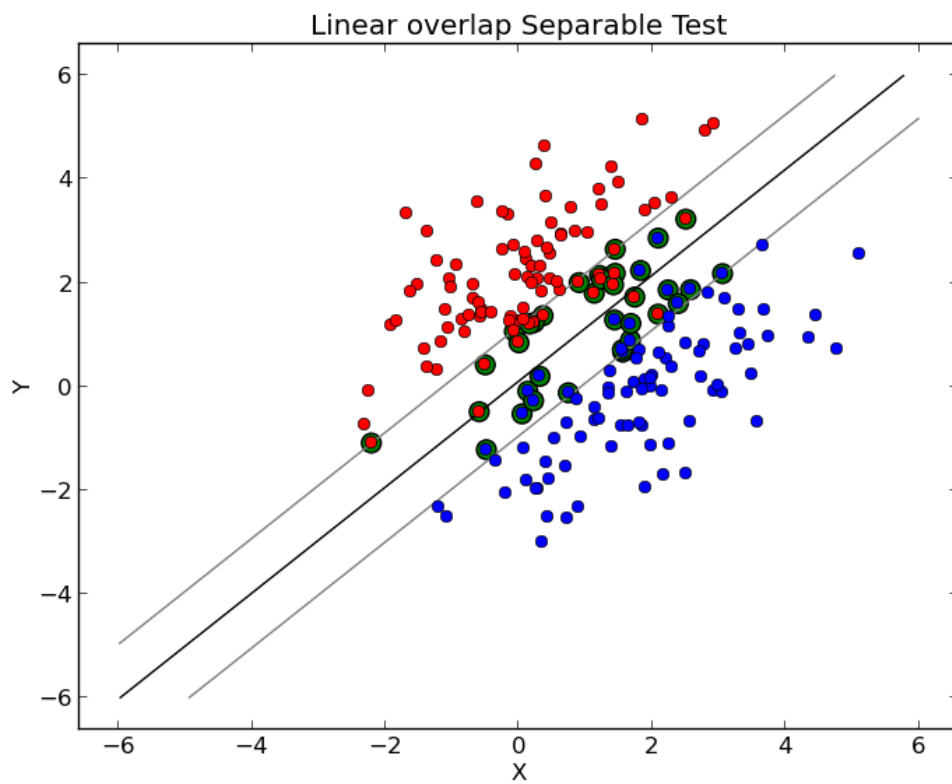
Homework05: SVM

- 程序源码: svm.py
- 运行方式: python svm.py
- 运行结果: linear_separable.png linear_overlap_separable.png non_linear_separable.png

linear_separable.png



linear_overlap_separable.png



non_linear_separable.png

