

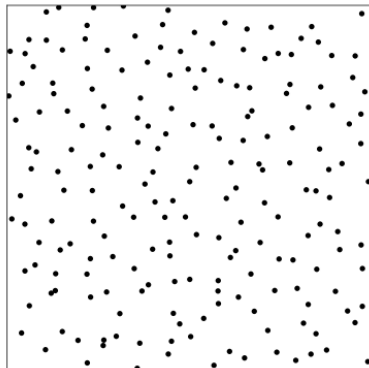
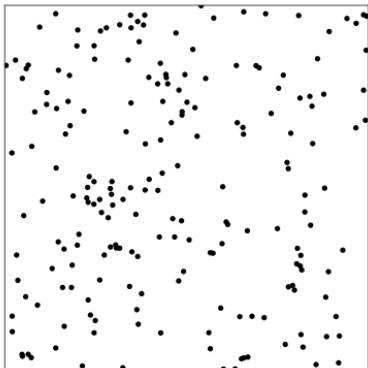
On determinantal point processes

Rémi Bardenet

CNRS & CRISAL, Univ. Lille, France

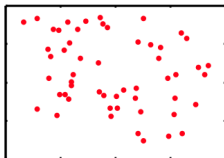
July 6th, 2015

Poisson vs determinantal PP

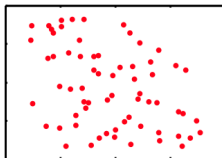


Diabetic neuropathy dataset [1, 2]

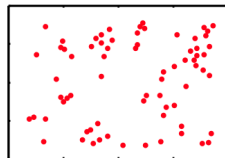
mod1



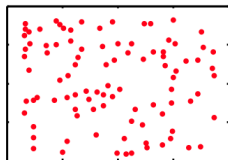
mod2



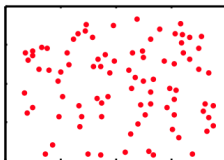
sev1



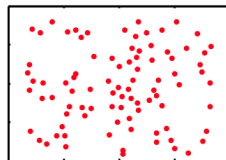
normal



mild1



mild2



Tutorials for

- ▶ probabilists [3],
- ▶ statisticians [4],
- ▶ machine learners [5].

For a very short intro, you may also check [6].

- [1] L. A. Waller, A. Särkkä, V. Olsbo, M. Myllymäki, I. G. Panoutsopoulou, W. R. Kennedy, and G. Wendelschafer-Crabb.
Second-order spatial analysis of epidermal nerve fibers.
Statistics in Medicine, 30(23):2827–2841, 2011.
- [2] R. H. Affandi, E. B. Fox, R. P. Adams, and B. Taskar.
Learning the parameters of determinantal point processes.
In Proceedings of the International Conference on Machine Learning (ICML), 2014.
- [3] J. B. Hough, M. Krishnapur, Y. Peres, and B. Virág.
Determinantal processes and independence.
Probability surveys, 2006.
- [4] F. Lavancier, J. Møller, and E. Rubak.
Determinantal point process models and statistical inference.
Preprint, available as <http://arxiv.org/abs/1205.4818>, 2012.

- [5] A. Kulesza and B. Taskar.
Determinantal point processes for machine learning.
Foundations and Trends in Machine Learning, 2012.
- [6] R. Bardenet and M. K. Titsias.
Inference for determinantal point processes without spectral knowledge.
Preprint, available on Arxiv, 2015.