

Ingrid K. Glad

Professor of statistics, Dept. of Mathematics

- methods for high-dimensional data
- non-parametrics
- changepoint and anomaly detection
- genomics, sensor streams

Data Science Day 2021

BigInsight Centre for research based innovation





- 2015- 2023
- Model based analytics for large, complex data
- Personalized solutions
- Predicting transient phenomena



UiO : **University of Oslo**



Skatteetaten



Statistisk sentralbyrå
Statistics Norway





Statistisk sentralbyrå
Statistics Norway

Li-Chun Zhang, prof. II UiO

“Counting and estimating motifs in graphs”

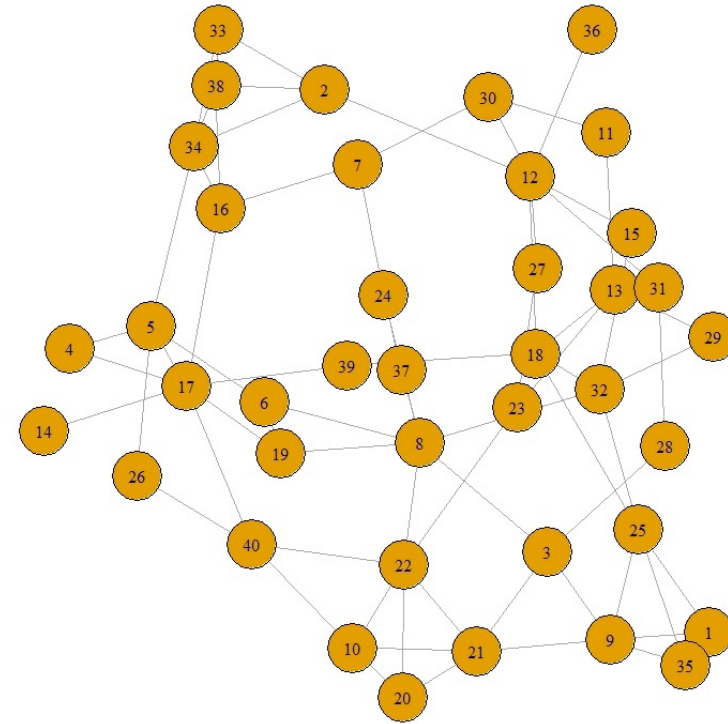
Graph sampling theory for estimation of graph parameters of interest

Undirected graphs

Motifs – subgraphs

Counting algorithms for motifs

Project description available



Population graph



Morten Stakkeland, f.aman. II UiO
&
Ingrid K. Glad



“Emergency or just another safety test onboard?”

Develop a classification method which manages to distinguish between real emergency shutdowns on an operational ship and shutdowns that result from the crew testing the systems on board. The dataset is ‘supervised’ and data will be a mixture of measurements and textual data (events).

- Will enable to find historical incidents involving a real safety risk, meaning ABB should make investigations.
- Will enable to automatically 'label' data to be able to train other algorithms for other purposes.

“Nonparametric density estimation with a parametric start – revisited”

Play and illustrate

At what n do the asymptotic results in Annals of Statistics kick in?

From univariate to d-variate

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kdensity: An R package for kernel density estimation with parametric starts and asymmetric kernels

Jonas Moss¹ and Martin Tveten¹

¹ University of Oslo

DOI: [10.21105/joss.01566](https://doi.org/10.21105/joss.01566)

Software

- [Review](#) ↗
- [Repository](#) ↗
- [Archive](#) ↗

Submitted: 11 July 2019

Published: 03 October 2019

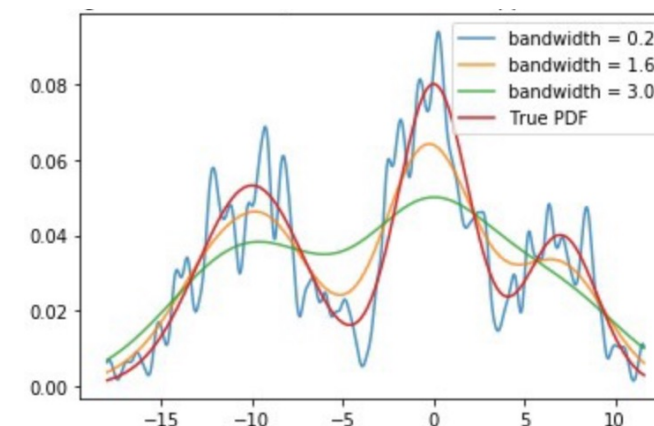
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Summary

It is often necessary to estimate a probability density non-parametrically, that is, without making strong parametric assumptions such as normality. This R (R Core Team, 2019) package provides a non-parametric density estimator that can take advantage of some of the knowledge the user has about the probability density.

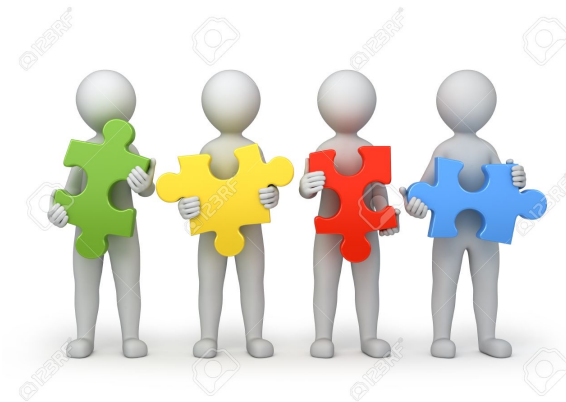
Kernel density estimation (Silverman, 2018) is a popular method for non-parametric density estimation based on placing kernels on each data point. Hjort & Glad (1995) extended kernel density estimation with *parametric starts*. The parametric start is a parametric density that is multiplied with the kernel estimate. When the data-generating density is reasonably close to the parametric start density, kernel density estimation with that parametric start will outperform ordinary kernel density estimation.



Data Science Day UiO 2021 – Oct. 27th

<https://www.mn.uio.no/english/research/innovation/data-science/events/data-science-day-uio-2021.html>

Wanted:



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