Statistical Machine Learning
Sharif University of Technology
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March 28, 2021
CE 40-729

Reading Assignment 3

(Point Processes)

Presentations Date & Time: Sunday, April 20th, 2021 (1400/01/31)
Group 01 – Group 03
Presentations Date & Time: Tuesday, April 25th, 2021 (1400/02/05)
Group 02 – Group 04
Please upload the presentation files on Quera (and also email me) before the due date
(Please upload/send both pdf and source files)
Each presentation 30 minutes + 15 minute discussions

The third module of the course is about Point Processes. Besides the applications of point processes, the theory of point processes is also important. The main reference for this topic is [0]. My suggestion is not to spent much time on the proofs when reading this reference. All the groups are recommended to study the general assignment.

General Assignment (reading for all groups)

Reference [0] and [00].

Presentations

1. Group 01: Correlated Cascades: Compete or Cooperate.
   Reference: [1] (1400/01/31)

2. Group 03: Dirichlet-Hawkes Processes with Applications to Clustering Continuous-Time Document Streams.
   Reference: [3] (1400/01/31)

3. Group 02: Deep Reinforcement Learning of Marked Temporal Point Processes.
   Reference: [2] (1400/02/05)

4. Group 04: ChOracle: A Unified Statistical Framework for Churn Prediction.
   References: [4] (1400/02/05)

References

[0]. Jakob Gulddahl Rasmussen, Temporal Point Processes and The Conditional Intensity Function, Lecture Notes, 2018.

[00]. D. J. Daley and D. Vere-Jones, An Introduction to the Theory of Point Processes, Vol. I, 2nd Edition, Springer, 2003.

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[1]. Ali Zarezade, Ali Khodadadi, Mehrdad Farajtabar, Hamid R. Rabiee, Hongyuan Zha, "Correlated Cascades: Compete or Cooperate," AAAI (2017).

[2]. Utkarsh Upadhyay, Abir De, Manuel Gomez-Rodrizuez, " Deep Reinforcement Learning of Marked Temporal Point Processes," NIPS (2018).

[3]. Nan Du, Mehrdad Farajtabar, Amr Ahmed, Alexander J Smola, Le Song, "Dirichlet-Hawkes Processes with Applications to Clustering Continuous-Time Document Streams," ACM SIGKDD (2015).

[4]. Ali Khodadadi, Seyedabbas Hosseini, Ehsan Pajouheshgar, Farnam Mansouri, Hamid R Rabiee, "ChOracle: A Unified Statistical Framework for Churn Prediction," IEEE Transactions on Knowledge and Data Engineering (2020).