1 Literature

- [1] Discusses the Phase-Type distribution and methods to estimate the parameters.
- [3] Book on dynamic programming and optimal control.
- [2] Introduces a new policy iteration-like algorithm for finding the optimal state costs or Q-factors and proves convergence properties.
- [4]
- [5] Concerns the Phase-Type distribution. Shows properties and proposes methods to estimate the parameters. Mentions the difficulties: Many parameters (n^2 for n states), of which, most are redundant but in most cases there is no canonical representation for each class ($2n-1$ independent parameters).
- [6] Uses BIDE to mine closed frequent sequential patterns.
- [7] A Survey of Sequential Pattern Mining. Describes general concepts, problem variants and the existing algorithms.
- [8] Intoduces Reward Model, Fluid Model (first and second order, reflecting and absorbing boundary) and Fluid Stochastic Petri Nets. Gives differential equations for transient behavior and proposes methods to solve/compute them.
- [9] Estimates transition probabilities for countably infinite state spaces.
- [10] Concerns Fluid Stochastic Petri Nets, summarizes the theory and provides examples.
- [11] Concerns estimating CTMC's with discretely observed data.
- [12] Considers three states (perfect, satisfactory and failed) and maintenance at scheduled (fixed interval) and unscheduled (exponential interval) times and finds the policy that minimizes the cost.
- [13] Proposes a method of modelling insurance losses via mixtures of Erlang distributions. Also explains why Phase-type distributions are not practical for this situation.
- [14] Models software faults with intervals of phase type distribution.
- [15] Introduces jumps that can occur at transition times, the size of the jumps are according to some distribution. The paper gives the resulting differential equations and methods to solve them.
- [16] Introduces the BIDE algorithm for finding closed frequent sequential patterns.

References

[1] Søren Asmussen, Olle Nerman, and Marita Olsson. Fitting phase-type distributions via the em algorithm. *Scandinavian Journal of Statistics*, pages 419–441, 1996.

[2] Dimitri P Bertsekas and Huizhen Yu. Q-learning and enhanced policy iteration in discounted dynamic programming. *Mathematics of Operations Research*, 37(1):66–94, 2012.

[3] Dimitri P Bertsekas, Dimitri P Bertsekas, Dimitri P Bertsekas, and Dimitri P Bertsekas. *Dynamic programming and optimal control*, volume 1. Athena Scientific Belmont, MA, 1995.

[4] John R Birge and Francois Louveaux. *Introduction to stochastic programming*. Springer Science & Business Media, 2011.

[5] Peter Buchholz, Jan Kriege, and Iryna Felko. *Input modeling with phase-type distributions and Markov models: theory and applications*. Springer, 2014.

[6] Jun Chen and Ratnesh Kumar. Pattern mining for predicting critical events from sequential event data log. *IFAC Proceedings Volumes*, 47(2):1–6, 2014.

[7] Philippe Fournier-Viger, Jerry Chun-Wei Lin, Rage Uday Kiran, Yun Sing Koh, and R Thomas. A survey of sequential pattern mining. *Data Science and Pattern Recognition*, 1(1):54–77, 2017.

[8] Marco Gribaudo and Miklós Telek. Fluid models in performance analysis. In *International School on Formal Methods for the Design of Computer, Communication and Software Systems*, pages 271–317. Springer, 2007.

[9] Monir Hajiaghayi, Bonnie Kirkpatrick, Liangliang Wang, and Alexandre Bouchard-Côté. Efficient continuous-time markov chain estimation. In *ICML*, pages 638–646, 2014.

[10] Graham Horton, Vidyadhar G Kulkarni, David M Nicol, and Kishor S Trivedi. Fluid stochastic petri nets: Theory, applications, and solution techniques. *European Journal of Operational Research*, 105(1):184–201, 1998.

[11] Yasunari Inamura et al. Estimating continuous time transition matrices from discretely observed data. Technical report, Bank of Japan, 2006.

[12] Szilard Kalosi, Stella Kapodistria, and Jacques AC Resing. Condition-based maintenance at both scheduled and unscheduled opportunities. *arXiv preprint arXiv:1607.02299*, 2016.

[13] Simon CK Lee and X Sheldon Lin. Modeling and evaluating insurance losses via mixtures of erlang distributions. *North American Actuarial Journal*, 14 (1):107–130, 2010.

[14] Hiroyuki Okamura and Tadashi Dohi. Building phase-type software reliability models. In *Software Reliability Engineering, 2006. ISSRE'06. 17th International Symposium on*, pages 289–298. IEEE, 2006.

[15] Elena I Tzenova, Ivo JBF Adan, and Vidyadhar G Kulkarni. Fluid models with jumps. *Stochastic models*, 21(1):37–55, 2005.

[16] Jianyong Wang and Jiawei Han. Bide: Efficient mining of frequent closed sequences. In *Data Engineering, 2004. Proceedings. 20th International Conference on*, pages 79–90. IEEE, 2004.