Machine Learning Readings

Yu-Hsiang Lin

Abstract

Papers and books in machine learning that I find interesting.

1. Information Retrieval

1.1. Neural Ranking

1.1.1. Review

1. An introduction (Mitra & Craswell, 2018).
2. Actually a review of recommender systems (Zhang et al., 2019).
3. Are We Really Making Much Progress? A Worrying Analysis of Recent Neural Recommendation Approaches (Dacrema et al., 2019).

1.1.2. Models

1. Deep Structured Semantic Model (DSSM) (Huang et al., 2013).
2. Multiple document fields (Zamani et al., 2018).
3. Neural Factorization Machines (He & Chua, 2017).

2. Reinforcement Learning

2.1. General Review and Books

1. Reinforcement Learning: An Introduction (2nd ed) (Sutton & Barto, 2018).
2. Deep Reinforcement Learning Hands-On (Lapan, 2018).

3. General Machine Learning

1. The Deep Learning Book (Goodfellow et al., 2016).
2. Machine Learning Yearning (Ng, 2018).
3. Machine Learning Engineering (Burkov, 2020).
4. (For general public) Probably Approximately Correct (Valiant, 2013).
5. The Hundred-Page Machine Learning Book (Burkov, 2019).
6. Dive into Deep Learning (Zhang et al., 2021).
7. (For general public) The Book of Why: The New Science of Cause and Effect (Pearl & Mackenzie, 2018).

4. Haven't Got Time to Categorize

1. The Deep Bootstrap Framework: Good Online Learners are Good Offline Generalizers (Nakkiran et al., 2021).

References

Burkov, A. *The Hundred-Page Machine Learning Book*. Andriy Burkov, 2019. http://themlbook.com/.

Burkov, A. *Machine Learning Engineering*. Andriy Burkov, 2020. http://www.mlebook.com/wiki/doku.php.

Dacrema, M. F., Cremonesi, P., and Jannach, D. Are we really making much progress? a worrying analysis of recent neural recommendation approaches. In *Proceedings of the 13th ACM Conference on Recommender Systems*, RecSys '19, pp. 101109, New York, NY, USA, 2019. Association for Computing Machinery. ISBN 9781450362436. doi: 10.1145/3298689.3347058. URL https://doi.org/10.1145/3298689.3347058.

Goodfellow, I., Bengio, Y., and Courville, A. *Deep Learning*. MIT Press, 2016. http://www.deeplearningbook.org.

He, X. and Chua, T.-S. Neural factorization machines for sparse predictive analytics. In *Proceedings of the 40th International ACM SIGIR Conference on Research and Development in Information Retrieval*, SIGIR '17, pp. 355364, New York, NY, USA, 2017. Association for Computing Machinery. ISBN 9781450350228. doi: 10.1145/3077136.3080777. URL https://doi.org/10.1145/3077136.3080777.

. Correspondence to: Yu-Hsiang Lin <yuhsianl@alumni.cmu.edu>.

Proceedings of the 38^{th} International Conference on Machine Learning, PMLR 139, 2021.

Huang, P.-S., He, X., Gao, J., Deng, L., Acero, A., and Heck, L. Learning deep structured semantic models for web search using clickthrough data. ACM International Conference on Information and Knowledge Management (CIKM), October 2013. URL https://www.microsoft.com/en-us/research/publication/learning-deep-structured-semantic-models-for-web-search-using-clickthrough-data/.

Lapan, M. *Deep Reinforcement Learning Hands-On*. Packt, 2018. https://www.packtpub.com/product/deep-reinforcement-learning-hands-on/9781788834247.

Mitra, B. and Craswell, N. An introduction to neural information retrieval. *Foundations and Trends in Information Retrieval*, 13(1):1–126, December 2018. URL https://www.microsoft.com/en-us/research/publication/introduction-neural-information-retrieval/.

Nakkiran, P., Neyshabur, B., and Sedghi, H. The deep bootstrap framework: Good online learners are good offline generalizers, 2021.

Ng, A. *Machine Learning Yearning*. Andrew Ng, 2018. https://github.com/ajaymache/machine-learning-yearning.

Pearl, J. and Mackenzie, D. *The Book of Why: The New Science of Cause and Effect*. Basic Books, 2018.

Sutton, R. S. and Barto, A. G. *Reinforcement Learning: An Introduction*. Bradford Books, 2018.

Valiant, L. *Probably Approximately Correct*. Basic Books, 2013.

Zamani, H., Mitra, B., Song, X., Craswell, N., and Tiwary, S. Neural ranking models with multiple document fields. In *Proceedings of the Eleventh ACM International Conference on Web Search and Data Mining*, WSDM '18, pp. 700708, New York, NY, USA, 2018. Association for Computing Machinery. ISBN 9781450355810. doi: 10.1145/3159652.3159730. URL https://doi.org/10.1145/3159652.3159730.

Zhang, A., Lipton, Z. C., Li, M., , and Smola, A. J. *Dive into Deep Learning*. 2021. https://d2l.ai/.

Zhang, S., Yao, L., Sun, A., and Tay, Y. Deep learning based recommender system: A survey and new perspectives. *ACM Comput. Surv.*, 52(1), February 2019. ISSN 0360-0300. doi: 10.1145/3285029. URL https://doi.org/10.1145/3285029.