

General Exam by Udaya Ghai(CS G2)

Title: “Generating Adversarial Disturbances for Controller Verification”

Committee: Elad Hazan (advisor), Yoram Singer, Karthik Narasimhan

Reading List:

1. Shai Shalev-Shwartz, Shai Ben-David. Understanding Machine Learning: From Theory to Algorithms. Cambridge University Press, 2014.
2. Elad Hazan. Introduction to Online Convex Optimization. Foundations and Trends in Optimization, 2016.
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4. Martin Zinkevich. Online Convex Programming and Generalized Infinitesimal Gradient Ascent. Proceedings of the 20th International Conference on Machine Learning, 2003.
5. Adam Kalai, Santosh Vempala. Efficient Algorithms for Online Decision Problems. Journal of Computer and System Sciences, 2005.
6. Peter Auer, Nicolò Cesa-Bianchi, Yoav Freund, Robert E. Schapire. The Nonstochastic Multiarmed Bandit Problem. SIAM J. Comput. 2003.
7. Abbasi, Yasin, Bartlett, Peter L, Kanade, Varun, Seldin, Yevgeny, and Szepesvári, Csaba. Online learning in markov decision processes with adversarially chosen transition probability distributions. In Advances in neural information processing systems, pp. 2508–2516, 2013.
8. Naman Agarwal, Alon Gonen, and Elad Hazan. Learning in non-convex games with an optimization oracle. In Alina Beygelzimer and Daniel Hsu, editors, Proceedings of the Thirty-Second Conference on Learning Theory, volume 99 of Proceedings of Machine Learning Research, pages 18– 29, Phoenix, USA, 25–28 Jun 2019. PMLR.
9. Naman Agarwal, Brian Bullins, Elad Hazan, Sham Kakade, and Karan Singh. Online control with adversarial disturbances. In International Conference on Machine Learning, pages 111–119, 2019a.
10. Max Simchowitz, Karan Singh, and Elad Hazan. Improper learning for non-stochastic control, 2020.
11. Tuhin Sarkar, Alexander Rakhlin, Near optimal finite time identification of arbitrary linear dynamical systems. Proceedings of the 36th International Conference on Machine Learning, PMLR 97:5610-5618, 2019.
12. Guanya Shi, Yiheng Lin, Soon-Jo Chung, Yisong Yue, and Adam Wierman. Beyond no-regret: Competitive control via online optimization with memory. arXiv preprint arXiv:2002.05318, 2020.
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