Topics for EE-735

Online learning in games with adaptivity and stochastic feedback

1. Yu-Guan Hsieh, Kimon Antonakopoulos, and Panayotis Mertikopoulos. Adaptive learning in continuous games: Optimal regret bounds and convergence to Nash equilibrium. In *Conference on Learning Theory*, page PMLR, 2021

2. Panayotis Mertikopoulos, Ya-Ping Hsieh, and Volkan Cevher. Learning in games from a stochastic approximation viewpoint. *arXiv preprint arXiv:2206.03922*, 2022

3. Yu-Guan Hsieh et al. No-regret learning in games with noisy feedback: Faster rates and adaptivity via learning rate separation. *arXiv preprint arXiv:2206.06015*, 2022

Stochastic-adversarial bandits (best of both worlds)

1. Sébastien Bubeck and Aleksandrs Slivkins. The best of both worlds: Stochastic and adversarial bandits. In *Conference on Learning Theory*, JMLR Workshop and Conference Proceedings, 2012

2. Thodoris Lykouris, Vahab Mirrokni, and Renato Paes Leme. Stochastic bandits robust to adversarial corruptions. In *Proceedings of the 50th Annual ACM SIGACT Symposium on Theory of Computing*, 2018

Computationally efficient online learning

1. Adam Kalai and Santosh Vempala. Efficient algorithms for online decision problems. *Journal of Computer and System Sciences*, 71(3):291–307, 2005

2. Baruch Awerbuch and Robert D Kleinberg. Adaptive routing with end-to-end feedback: Distributed learning and geometric approaches. In *Proceedings of the thirty-sixth annual ACM symposium on Theory of computing*, 2004

3. Hamed Hassani, Mahdi Soltanolkotabi, and Amin Karbasi. Gradient methods for submodular maximization. In *Advances in Neural Information Processing Systems 30*, 2017

Online learning and reinforcement learning

1. Chi Jin et al. Is Q-learning provably efficient? In *Advances in neural information processing systems 31*, 2018

2. Chi Jin, Zeyuan Allen-Zhu, Sébastien Bubeck, and Michael I Jordan. Provably efficient reinforcement learning with linear function approximation. In *Conference on Learning Theory*, page PMLR, 2020

Stronger notions of regret

1. Elad Hazan. Introduction to online convex optimization. *Foundations and Trends in Optimization*, 2016

Equilibrium computation for nonmonontone problems

1. Thomas Pethick, Puya Latafat, Panagiotis Patrinos, Olivier Fercoq, and Volkan Cevher. Escaping limit cycles: Global convergence for constrained nonconvex-nonconcave minimax problems. In *International Conference on Learning Representations*, 2022

2. Thomas Pethick, Olivier Fercoq, Puya Latafat, Panagiotis Patrinos, and Volkan Cevher. Solving stochastic weak Minty variational inequalities without increasing batch size. In *11th International Conference on Learning Representations*, 2023