

The Optimizer’s Curse

Soheil

1 Main Ideas

Being conditionally unbiased means: $\mathcal{E}[V_i]$

2 Questions

1. Why is this paper relevant to reinforcement learning? 2. How would you beat the optimizer’s curse without using Bayesian estimates? 3. What are the pro’s and con’s of using Bayesian estimates?

References

- [1] Heidi J. Albers, Kim Meyer Hall, Katherine D. Lee, Majid Alkaee Taleghan, and Thomas G. Dietterich. The role of restoration and key ecological invasion mechanisms in optimal spatial-dynamic management of invasive species. *Ecological Economics*, 151:44 – 54, 2018.
- [2] Kim Meyer Hall, Heidi J. Albers, Majid Alkaee Taleghan, and Thomas G. Dietterich. Optimal spatial-dynamic management of stochastic species invasions. *Environmental and Resource Economics*, 70(2):403–427, Jun 2018.
- [3] Shefali V. Mehta, Robert G. Haight, Frances R. Homans, Stephen Polasky, and Robert C. Venette. Optimal detection and control strategies for invasive species management. *Ecological Economics*, 61(2):237 – 245, 2007.
- [4] Matthew H. Meisner, Jay A. Rosenheim, and Ilias Tagkopoulos. A data-driven, machine learning framework for optimal pest management in cotton. *Ecosphere*, 7(3):e01263, 2016.
- [5] Sam Nicol, Regis Sabbadin, Nathalie Peyrard, and Iadine Chads. Finding the best management policy to eradicate invasive species from spatial ecological networks with simultaneous actions. *Journal of Applied Ecology*, 54(6):1989–1999.
- [6] Majid Alkaee Taleghan, Thomas G. Dietterich, Mark Crowley, Kim Hall, and H. Jo Albers. Pac optimal mdp planning with application to invasive species management. *Journal of Machine Learning Research*, 16:3877–3903, 2015.