

10-424/624: Bayesian Methods in ML

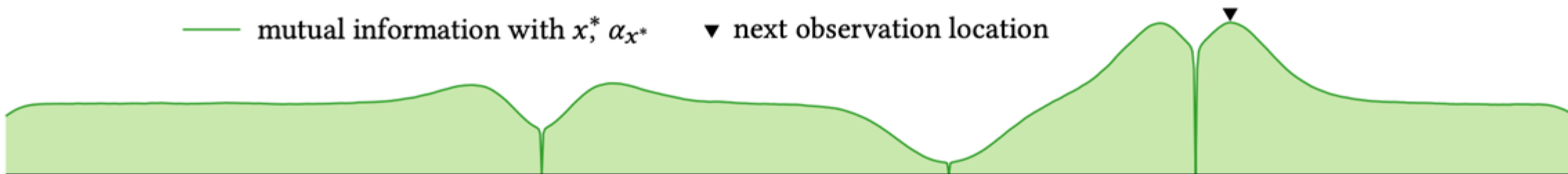
Lecture 15: Supplement & Figures

Henry Chai

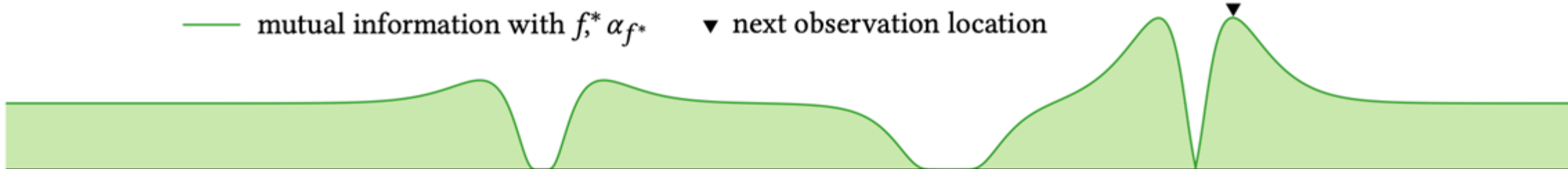
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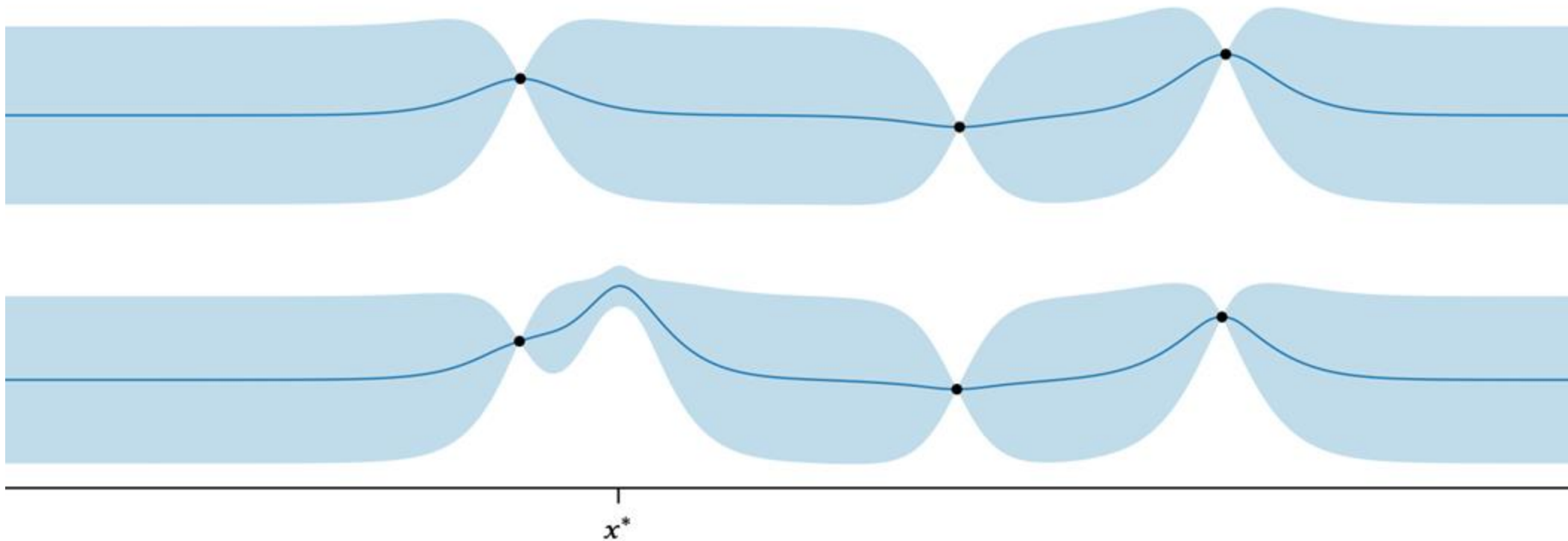
— mutual information with x^*, α_{x^*} ▼ next observation location



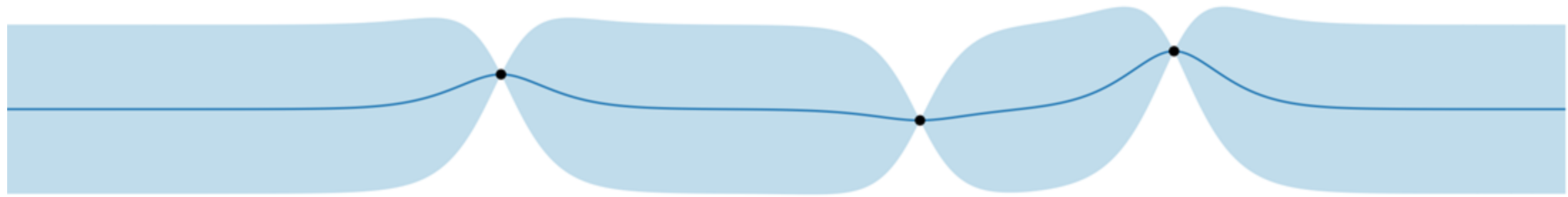
— mutual information with f^*, α_{f^*} ▼ next observation location



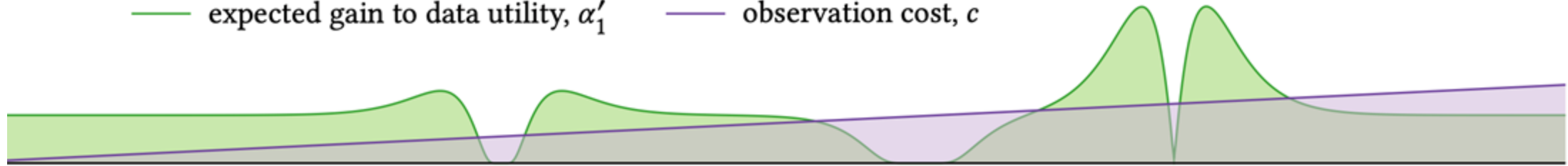
Entropy Sampling



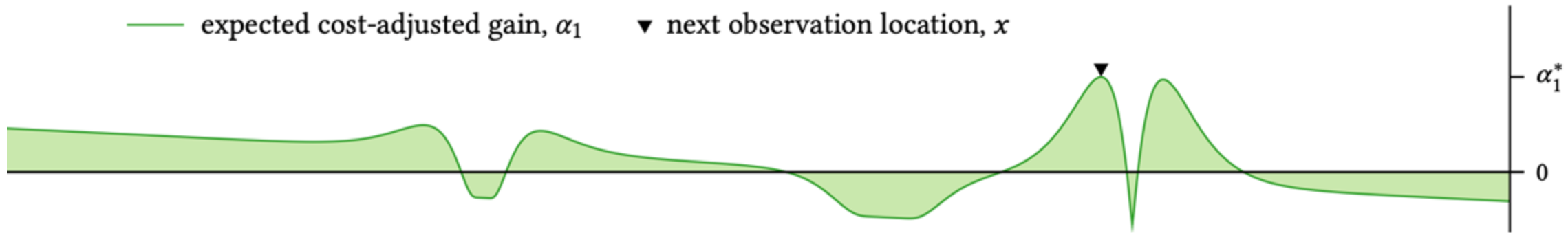
Predictive Entropy Sampling



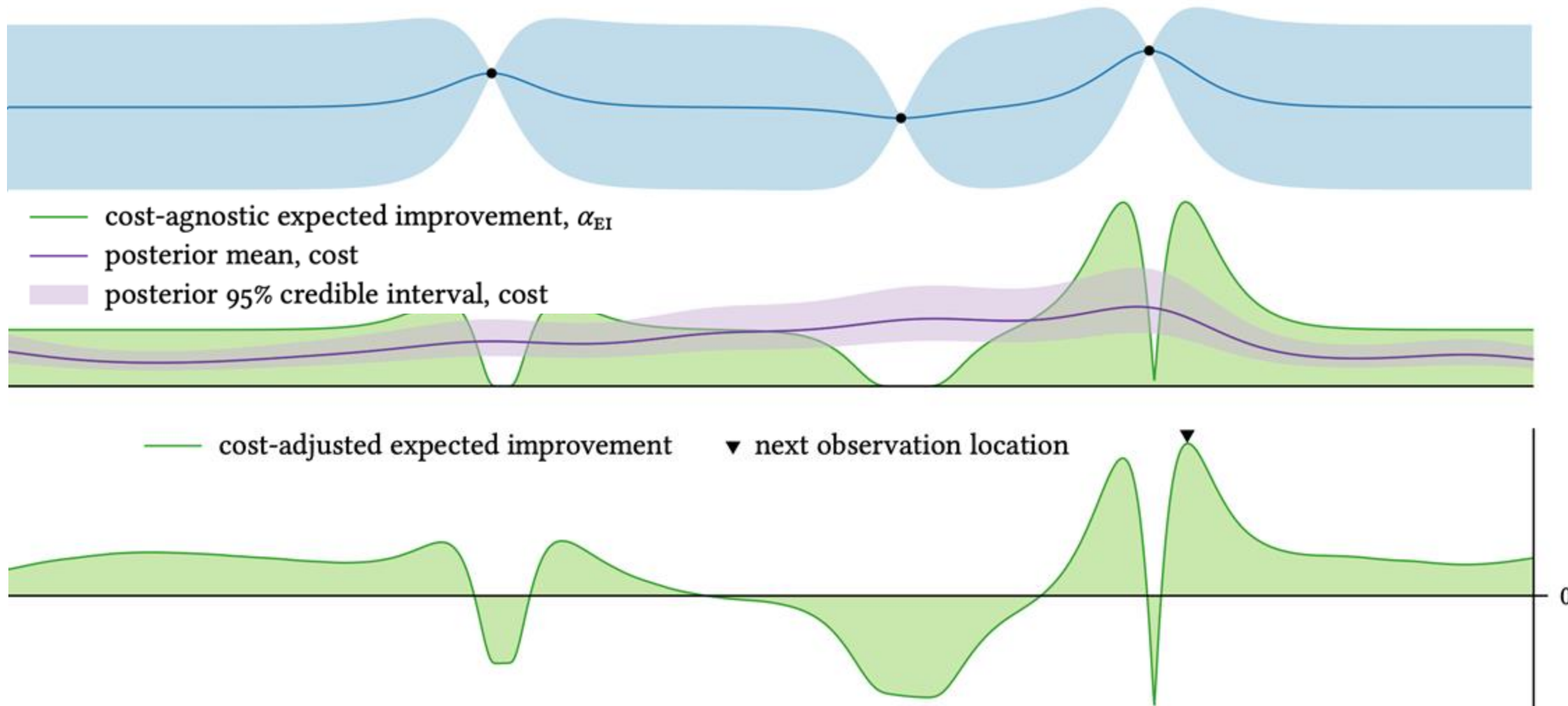
— expected gain to data utility, α'_1 — observation cost, c



— expected cost-adjusted gain, α_1 ▼ next observation location, x

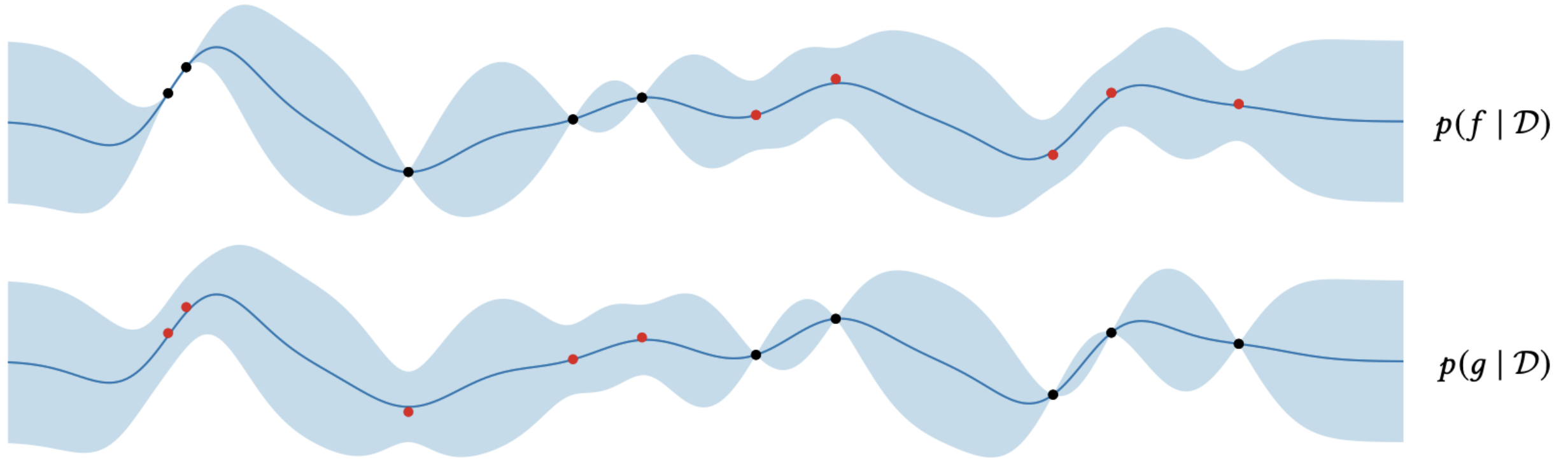


Cost-aware Expected Improvement



Cost-aware Expected Improvement

- observations (direct)
- observations (other function)
- posterior mean
- posterior 95% credible interval



Joint Gaussian Processes