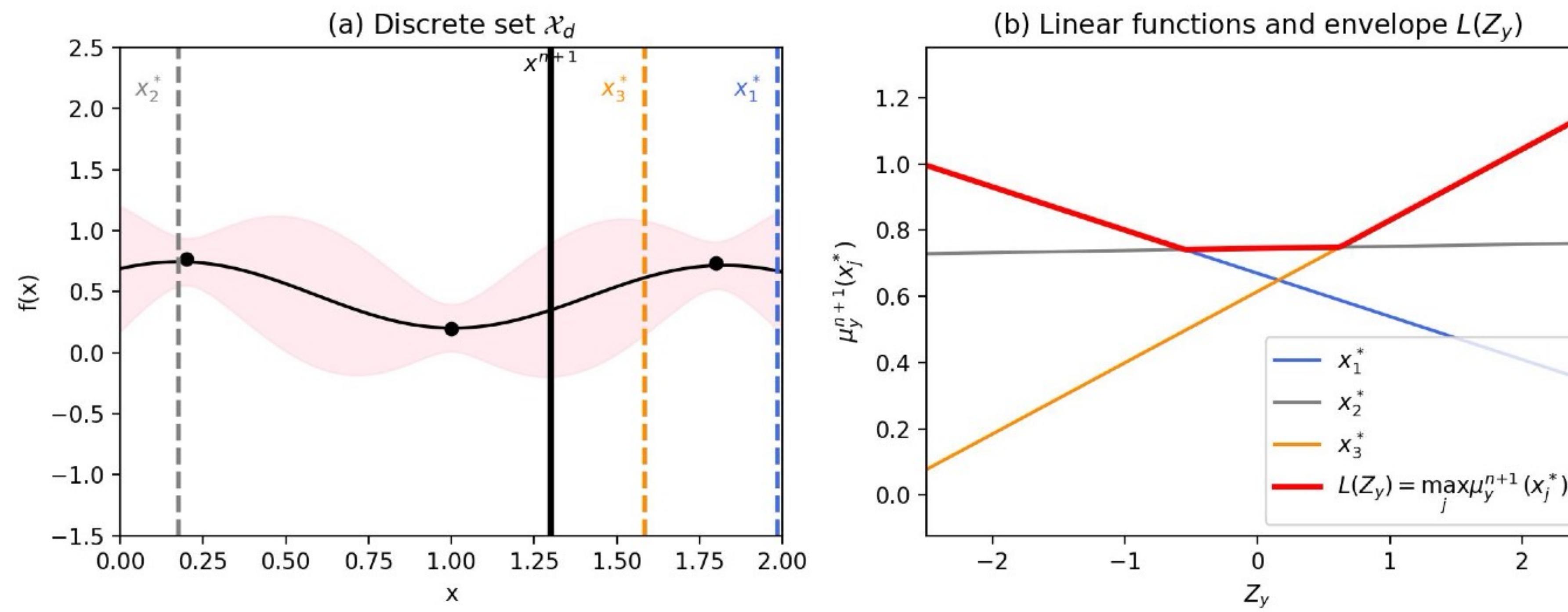


# High Value Linear Envelope - 3

Pearce et al. [2020]

- Continue with Scott et al. (2011) using the scenario-driven discrete set  $\mathcal{X}_d$ :



# Constrained BO Definition

$$x^* = \arg \max_{x \in \mathcal{X}} f(x) \quad \text{s.t.} \quad c_k(x) \leq 0, \quad k = 1, \dots, K.$$

Both the objective  $f(x)$  and the constraints  $c_k(x)$  are modeled as independent Gaussian Processes (GPs). At iteration  $n$ , their posteriors are described by their respective means and variances:

$\mu_y^n(x), \sigma_y^n(x)$  for the objective, and  $\mu_{c_k}^n(x), \sigma_{c_k}^n(x)$  for each constraint.