2024/11/27 Compare Elements in Extended Fields

$\mathbb{Q}<\xi_1, \xi_2>$ algorithm: replace all $\xi_1\xi_2$ with α_0

then compare $p(\xi_1, \xi_2) = p_1(\xi_1) + p_2(\xi_2)$ separately.

$\mathbb{Q}<\xi_1, \xi_2, \xi_3>$ algorithm:

$$\xi_1\xi_2\xi_3 = \alpha_0 \qquad \tau\xi_3 = \alpha_0$$

$$\xi_1\xi_2 + \xi_2\xi_3 + \xi_3\xi_1 = \alpha_1 \qquad \tau + \xi_3(\alpha_2 - \xi_3) = \alpha_1$$

$$\xi_1 + \xi_2 + \xi_3 = \alpha_2 \qquad \tau + \alpha_0\tau^{-1}(\alpha_2 - \alpha_0\tau^{-1}) = \alpha_1$$

$$\tau^3 + \alpha_0(\tau\alpha_2 - \alpha_0) = \alpha_1\tau^2$$

$$\tau^3 - \alpha_1\tau^2 + \alpha_2\alpha_0\tau - \alpha_0^2 = 0$$

2024/11/28 NN Search via Iteration

Iteration: can be SGD or modification of problem

Reduce Problem to Single Dimensional ...