

7(a)

$$f_i = f_\theta(x_i) + \varepsilon_i \quad \varepsilon_i \sim \mathcal{N}(0, \sigma_i^2)$$

for each σ_i'

$\mathcal{N}$ is independent

but not identically distributed.

7(b)

$$p(y_i | x_i)$$

$$= \prod_{i=1}^n \mathcal{N}(f_\theta(x_i) + \varepsilon_i)$$

7(c)

Diff of 6(d) and 7(c).

wrt. objective and loss

$$p(y_i | x_i) = \prod_{i=1}^n \frac{1}{\sqrt{2\pi}\sigma_i} \exp\left(-\frac{(y_i - f_\theta(x_i))^2}{2\sigma_i^2}\right)$$

obj looks like different

7(c) but finally same?

7(d) same as 6(e)?