FastChain Core Optimization Problem

@Cryptis

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1 Optimization Problem

$$\min_{\lambda, F_{\text{fan}}} \quad F(\lambda, F_{\text{fan}}) = w_1 \left(\frac{\text{hdrp90}(\lambda, F_{\text{fan}}) - \text{hdr}_{\text{target}}}{\sigma_{\text{hdr}}} \right)^2 + w_2 \left(\frac{\text{fork}(\lambda, F_{\text{fan}}) - \text{fork}_{\text{target}}}{\sigma_{\text{fork}}} \right)^2 + w_3 \left(\frac{\text{mempool}(\lambda, F_{\text{fan}}) - \text{mempool}_{\text{target}}}{\sigma_{\text{mp}}} \right)^2 + w_{\Delta\lambda} \left(\frac{\Delta\lambda}{\lambda_{\text{ref}}} \right)^2 \tag{1}$$

$$\text{s.t.} \quad \lambda \leq \lambda_{\text{bandwidth}}, \tag{2}$$

$$\lambda \leq \lambda_{\text{CPU}}, \tag{3}$$

$$F_{\min} \leq F_{\text{fan}} \leq F_{\max}, \tag{4}$$

$$\text{Pfork}(\lambda, F_{\text{fan}}) \leq \text{fork}_{\max}. \tag{5}$$