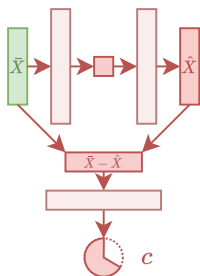**SOSAA RSM using the Icarus Architecture**

Input: $\bar{X} := (X, X - X_{\text{train}})$ — Pairwise Difference Regression

Out-of-Distribution Detector
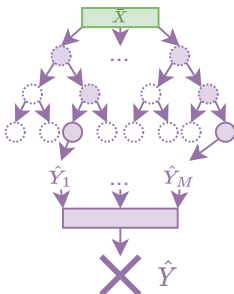
$\bar{X}$ → $\hat{X}$

$\bar{X} - \hat{X}$

c

Confidence Score

Trained with $\bar{X}_{\text{ID}} \cup \bar{X}_{\text{OOD}}$

Prediction Model

$\bar{X}$

$\hat{Y}_1 \quad \dots \quad \hat{Y}_M$

$\hat{Y}$

Point-Prediction

Trained with $(\bar{X}_{\text{train}}, Y_{\text{train}})$

Uncertainty Quantifier

$X' \sim \bar{X} \quad X' \sim \bar{X} \quad X' \sim \bar{X}$

$\hat{Y}' \quad \dots \quad \hat{Y}'$

$\hat{\sigma}$
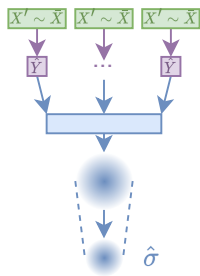
Uncertainty Level

Calibrated with $Y_{\text{valid}} - \hat{Y}_{\text{valid}}$

Output: $(Y \approx \hat{Y} \pm \hat{\sigma}) \mid c$ — **prediction** with **uncertainty** level, conditioned by **confidence** score