Normalization

$$\frac{z - \hat{\mu}}{\sqrt{\hat{\sigma}^2 + \varepsilon}}$$

Transformation

$$\gamma \cdot \hat{z} + \beta$$

$z \rightarrow$ $\rightarrow \hat{z} \rightarrow$ $\rightarrow z'$

Batch Normalization

$\hat{\mu} \leftarrow \text{mean}\{z\}$

$\hat{\sigma}^2 \leftarrow \text{mean}\{(z - \hat{\mu})^2\}$

MedBN (Ours)

$\hat{\mu} \leftarrow \text{med}\{z\}$

$\hat{\sigma}^2 \leftarrow \text{mean}\{(z - \hat{\mu})^2\}$