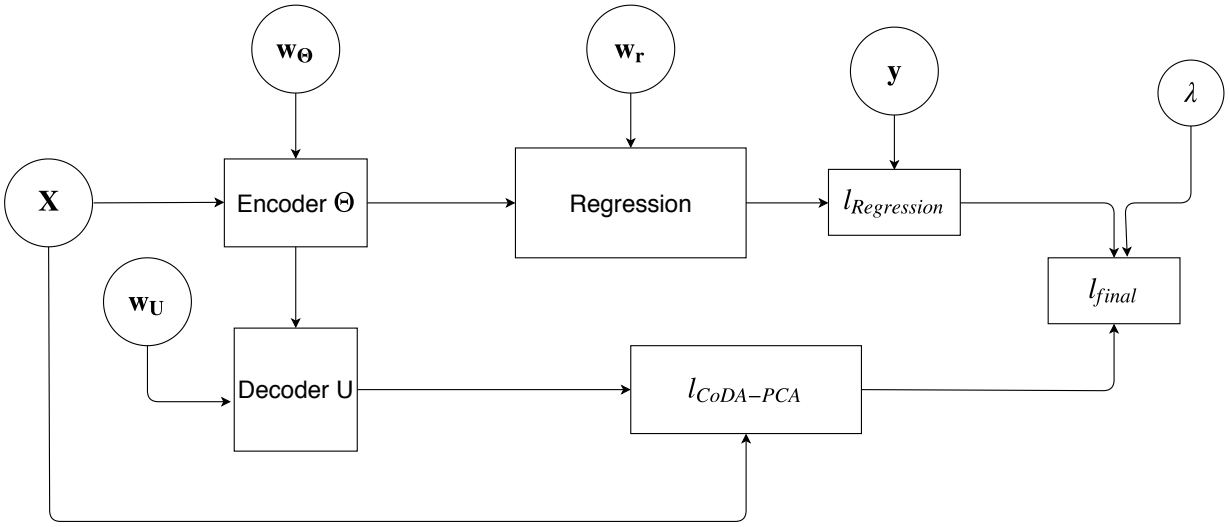
End to end CoDA PCA Regression Graph



Description of symbols:
$\mathbf{X}$: Input Matrix
$\mathbf{w_\Theta}$: Parameters for Encoding Network
$\mathbf{w_U}$: Parameters for Decoding Network
$\mathbf{w_r}$: Parameters for Regression
$\mathbf{y}$: Target vector
λ: Regularisation parameter, controls how much to weight reconstruction error

Step through of model:
Given a feature vector $\mathbf{X}$ and target vector $\mathbf{y}$, this model fits a regression to a low dimensional representation of the original data. The final loss l_{final} is computed as the sum of regression loss $l_{Regression}$ (squared error) and the reconstruction loss, with the reconstruction loss being scaled by the parameter λ. The encoding and decoding networks, represented by Θ and U respectively, and the reconstruction loss $l_{CoDA-PCA}$, are as described in the CoDA-PCA paper.