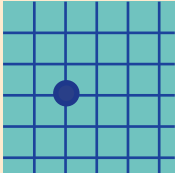
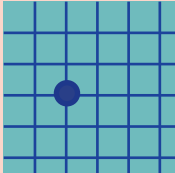
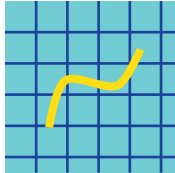
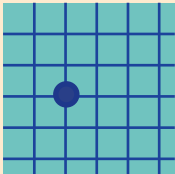
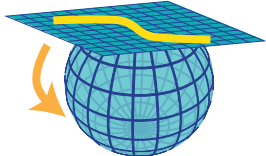
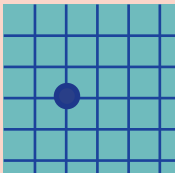


Geometry in Neural Network Layers

Layer Input	Layer Output	Layer Model
$x \in \mathbb{R}^n$ 	$y \in \mathbb{R}^{n'}$ 	 Perceptron
$x \in \mathbb{R}^n$ 	$y \in M$ 	 Perceptron-Exp from Riemannian VAE [Miolane20]
$x \in M$ 	$y \in \mathbb{R}^{n'}$ 	 Log-Perceptron from Hypersphere VAE [Davidson18]
$x \in M$ 	$y \in M$ 	 BiMap layer from [Huang16] ManifoldNet layer from [Chakraborty22]