

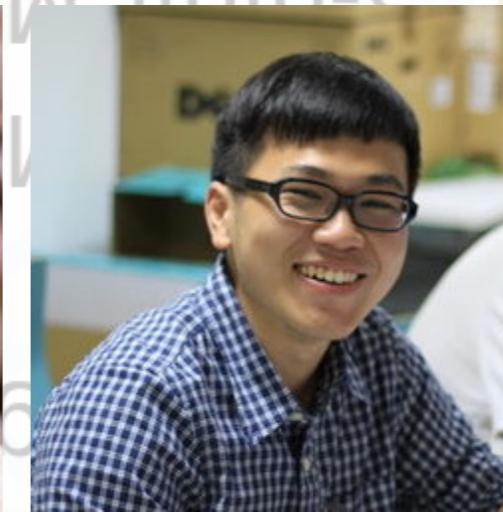
Multimodal Model-Agnostic Meta-Learning via Task-Aware Modulation



Risto Vuorio



Shao-Hua Sun



Hexiang Hu

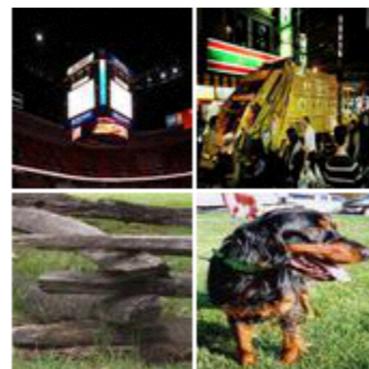


Joseph J. Lim



Train
Samples

Task 1



Test
Samples



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Task 2

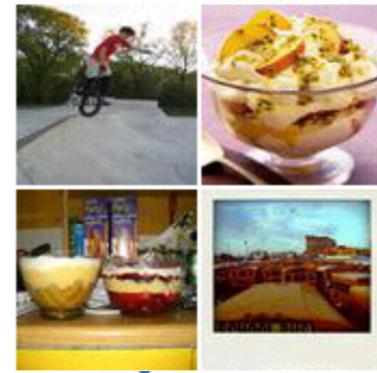
6	7	4	5	7
3	3			4
		5	4	3
			5	

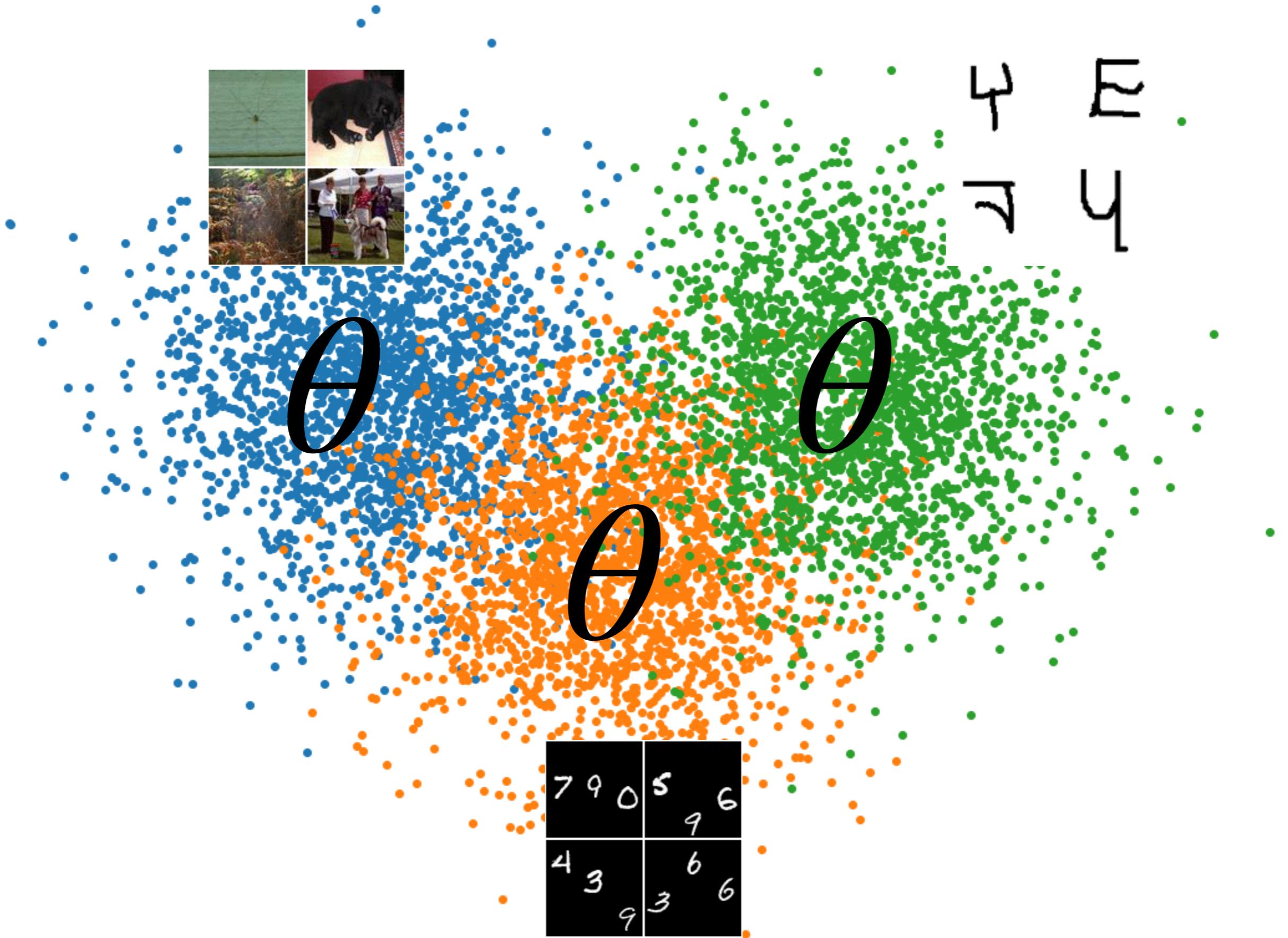
7	9	0	5	6
4	3			9
		3	6	6
		9		

Task 3

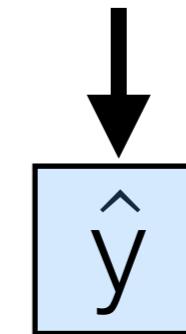
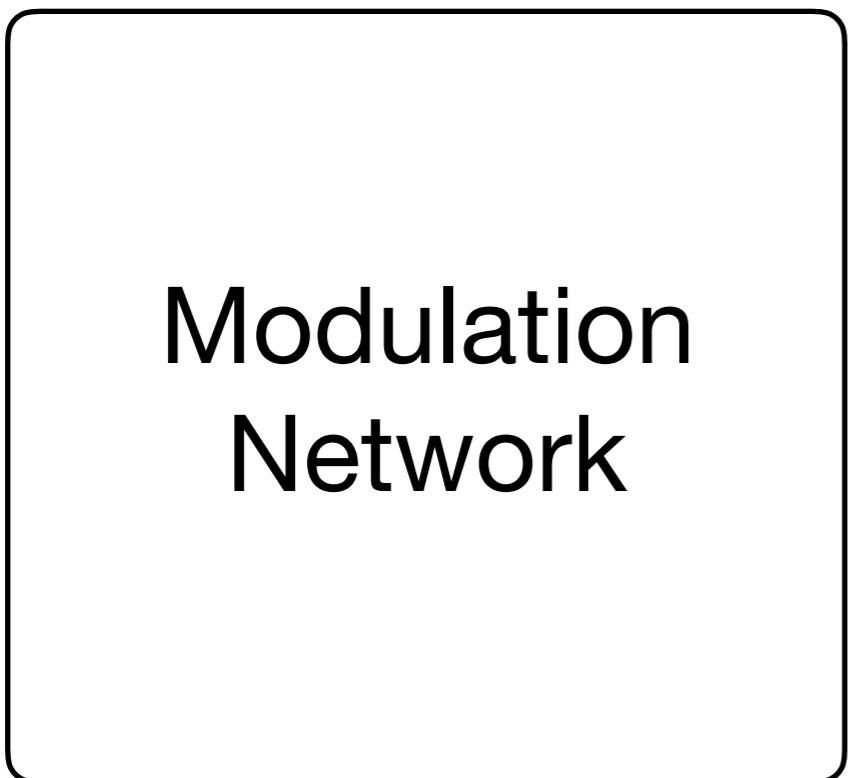
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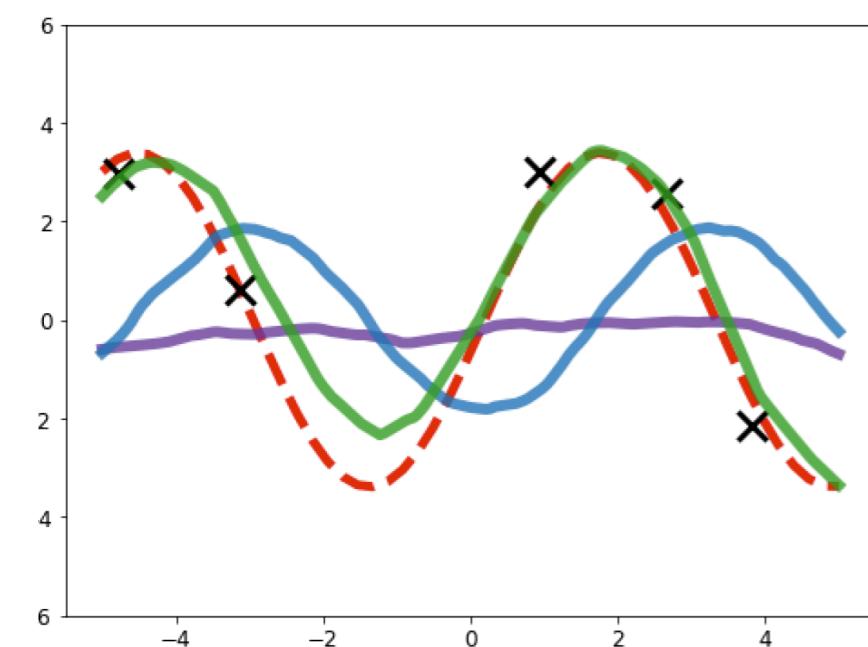
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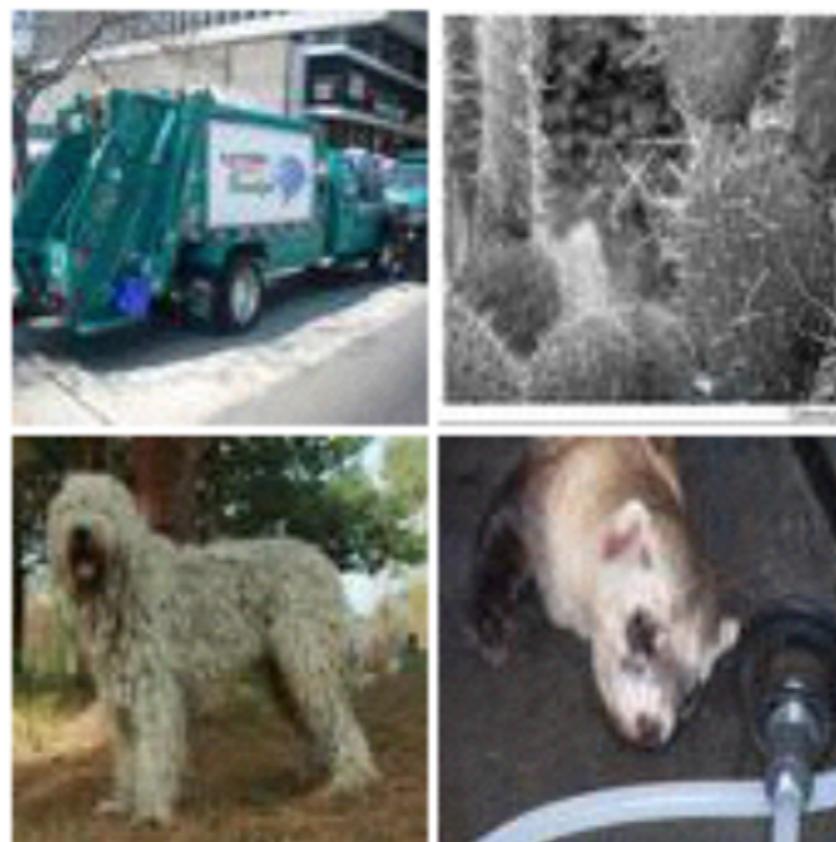
$\left\{ \begin{array}{c} \text{x} \\ \text{y} \end{array} \right\}$ Samples $\times K$



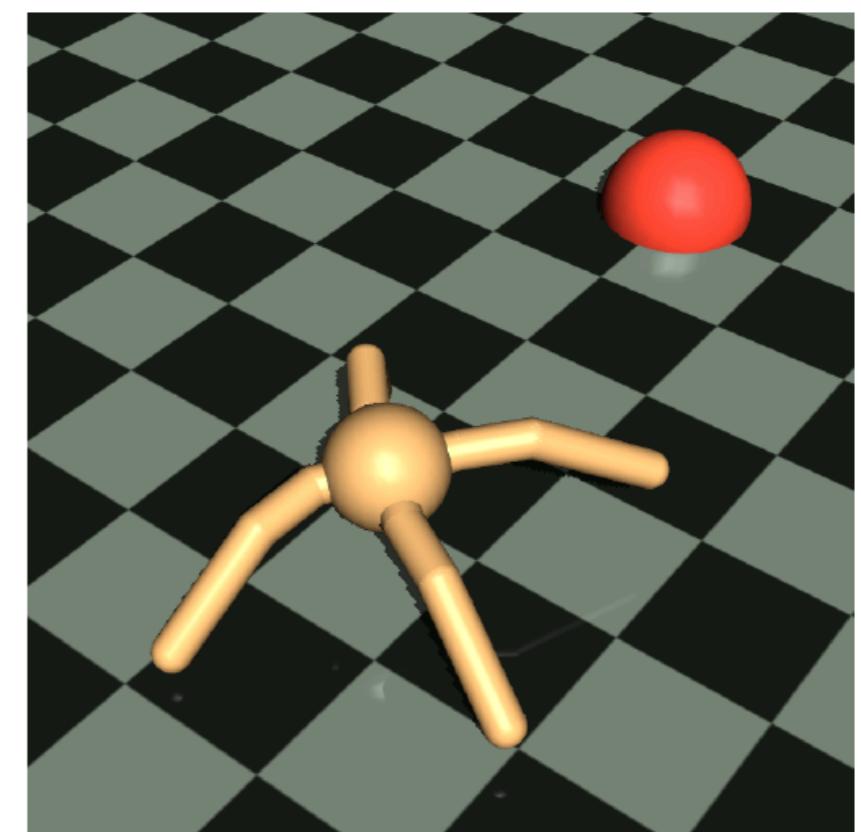
Problem Settings



Regression



Classification

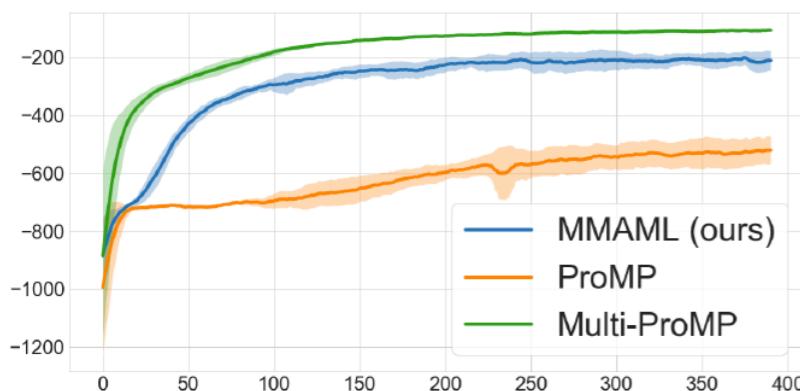


Reinforcement
Learning

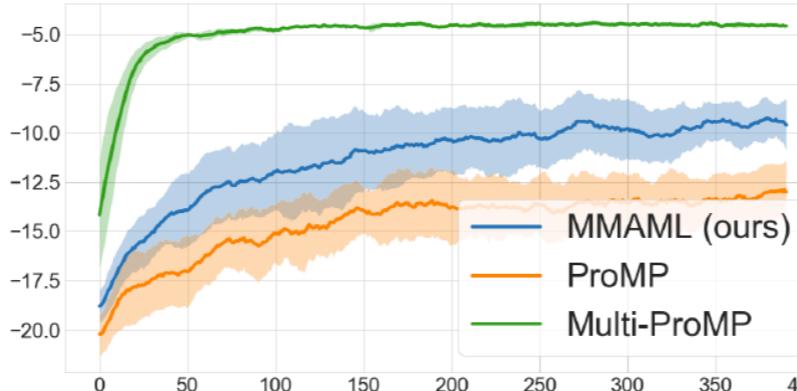
Few-Shot Classification

	1-shot	3-shot
MAML	44.69%	56.57%
Multi-MAML	58.66%	61.11%
MMAML (ours)	60.13%	63.52%

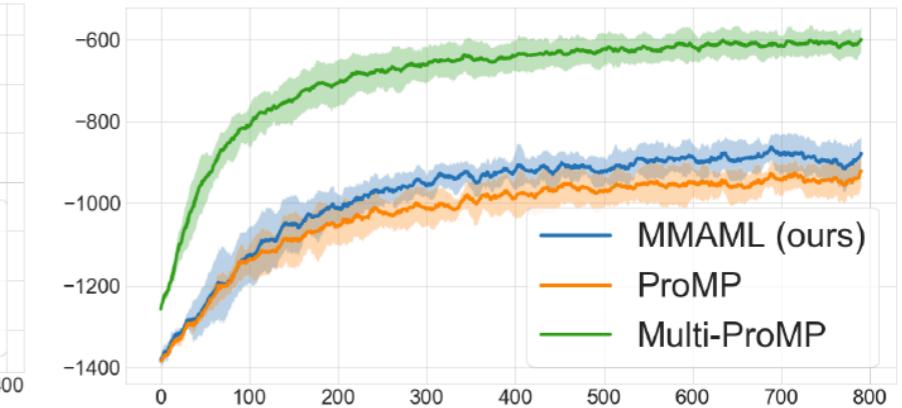
Reinforcement Learning Navigation Tasks



4-mode Point
Mass



4-mode Reacher



4-mode Ant

Learned Distributions in the Latent Space

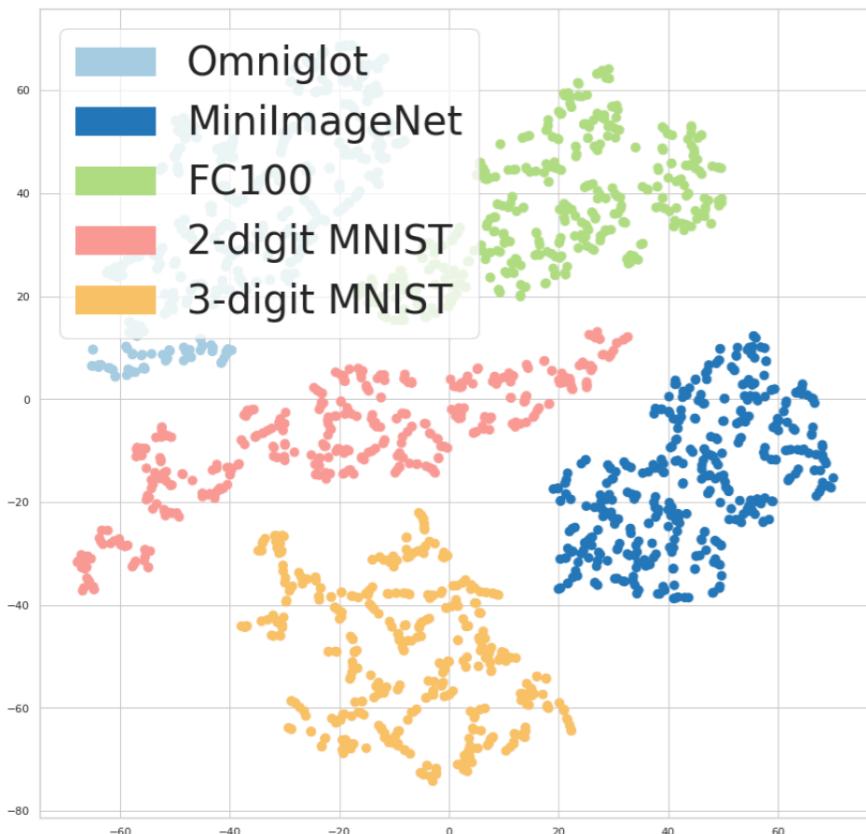
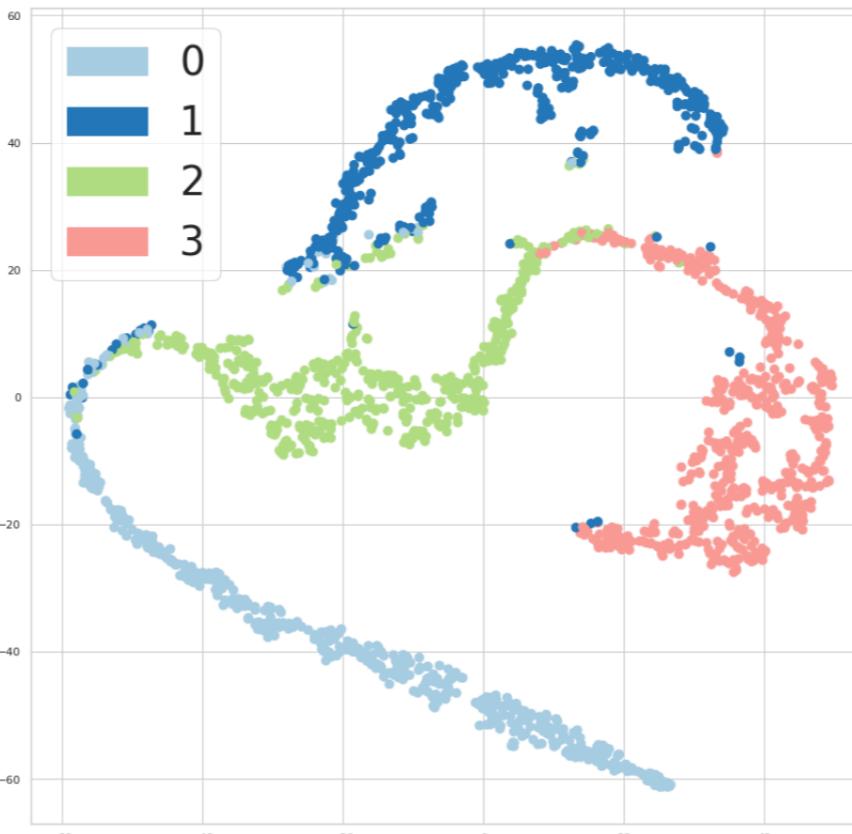
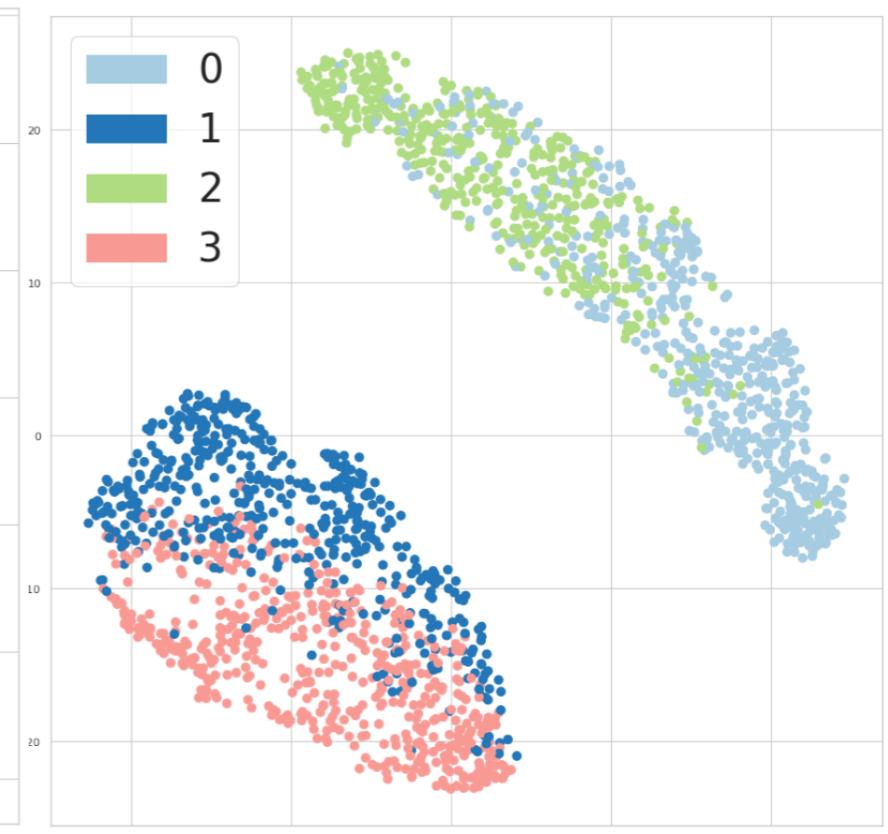


Image
Classification



RL Reacher



RL Point Mass