

05:00 -- 07:00 PM @ East Exhibition Hall B + C #31

Multimodal Model Agnostic Meta-Learning via Task-Aware Modulation



Risto Vuorio*



Shao-Hua Sun*

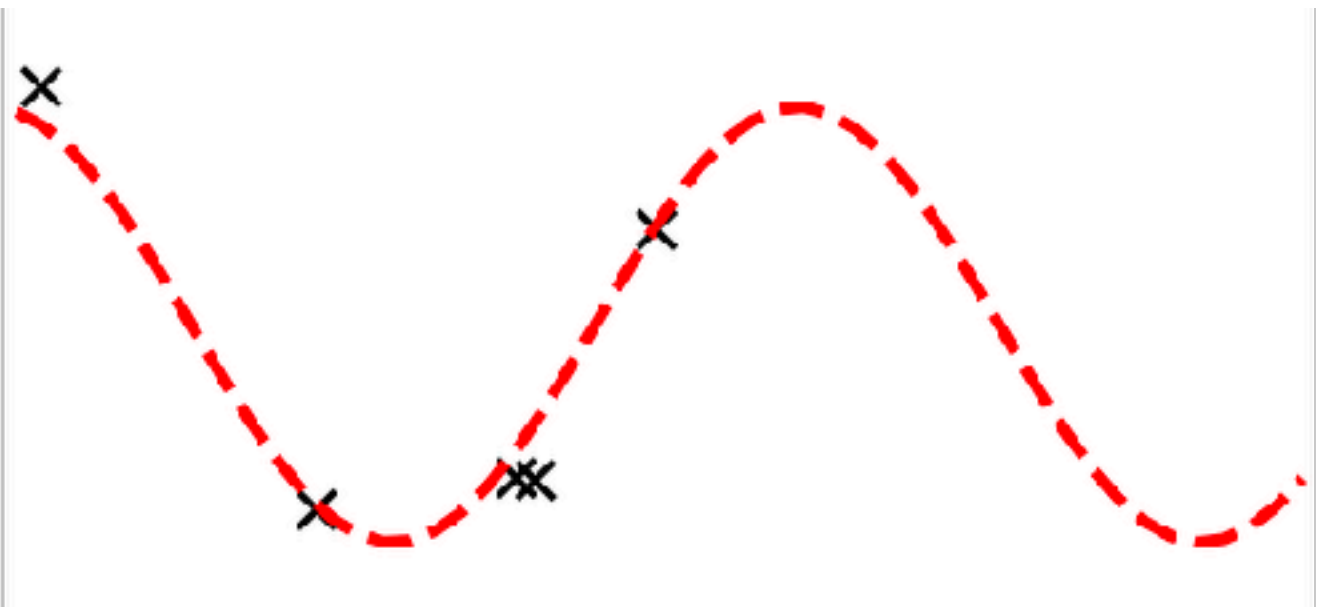


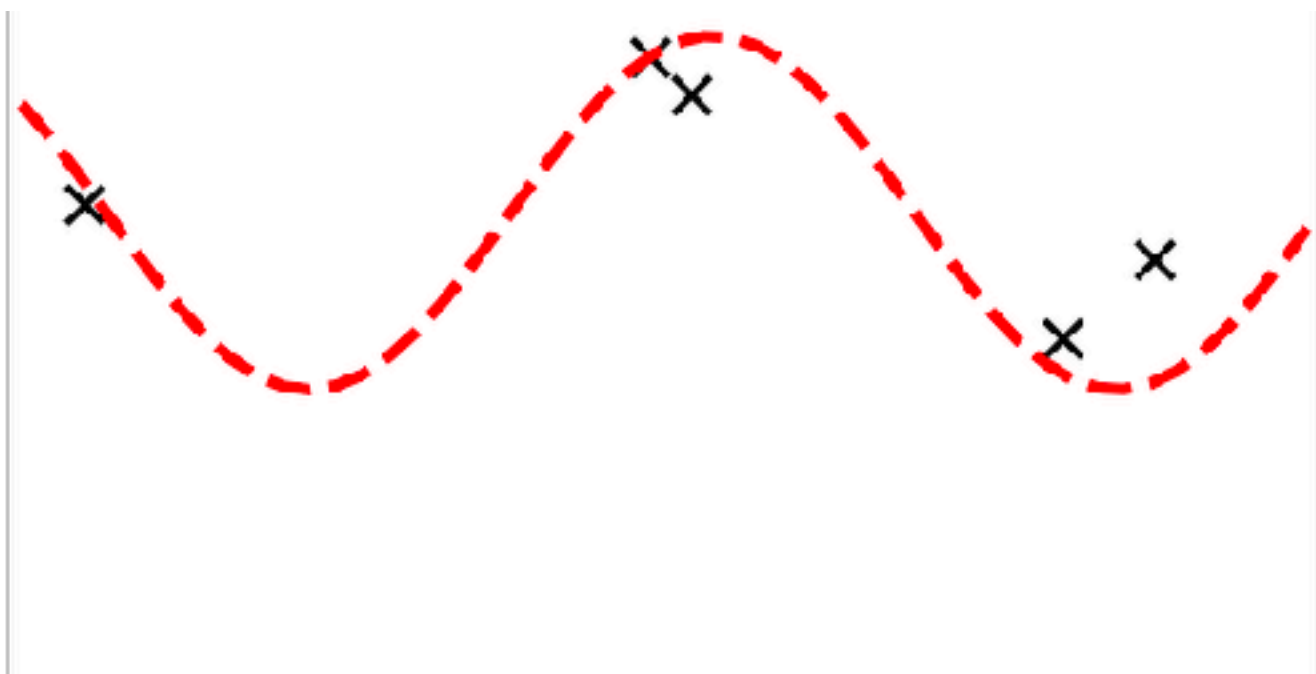
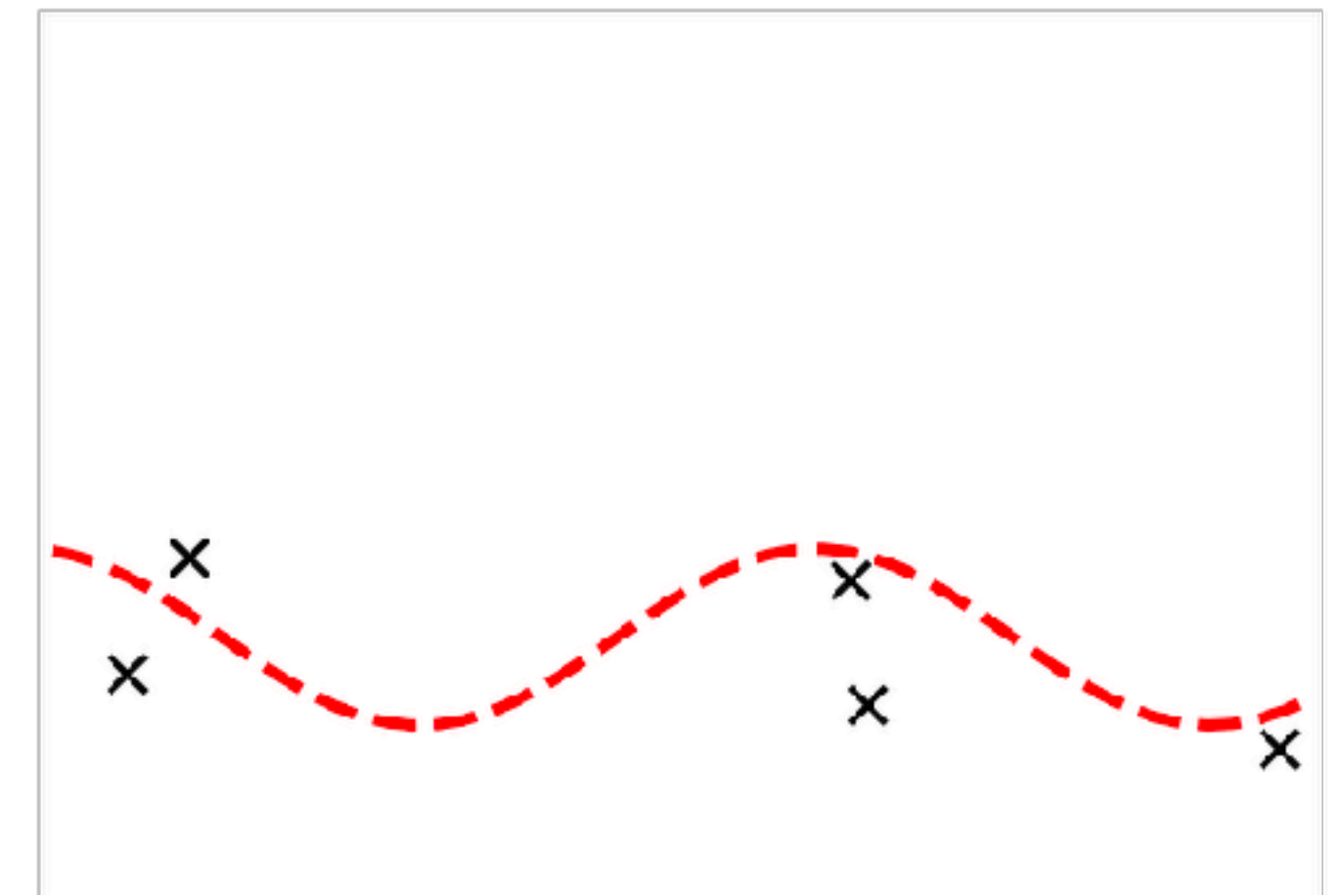
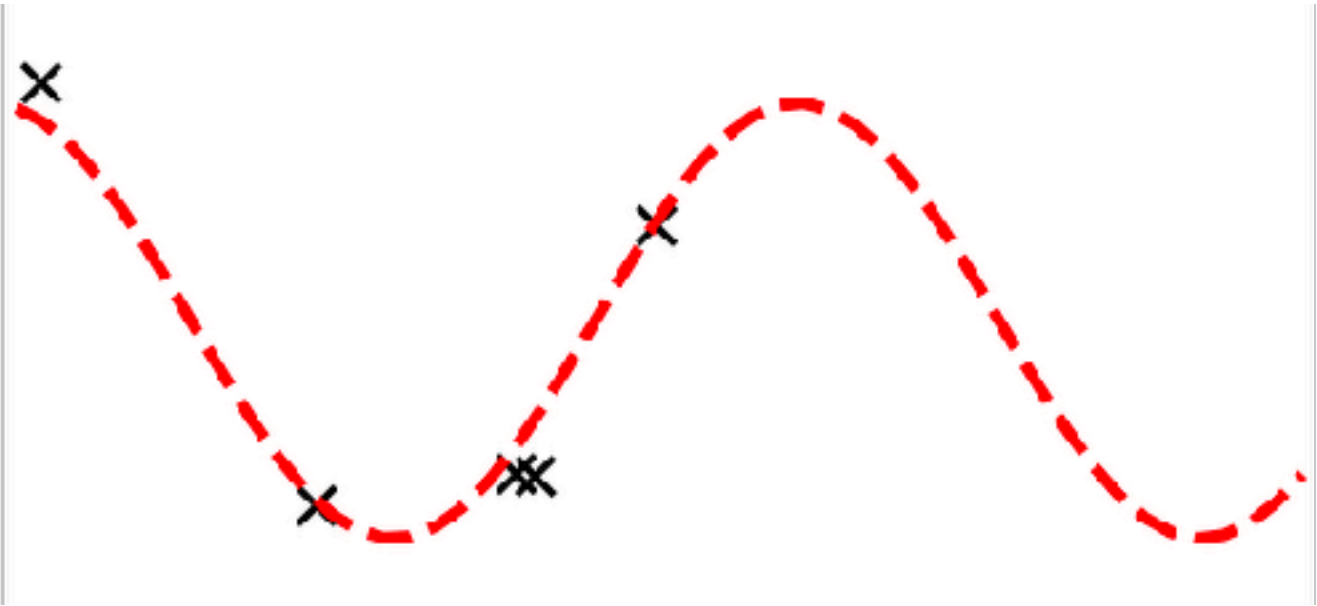
Hexiang Hu

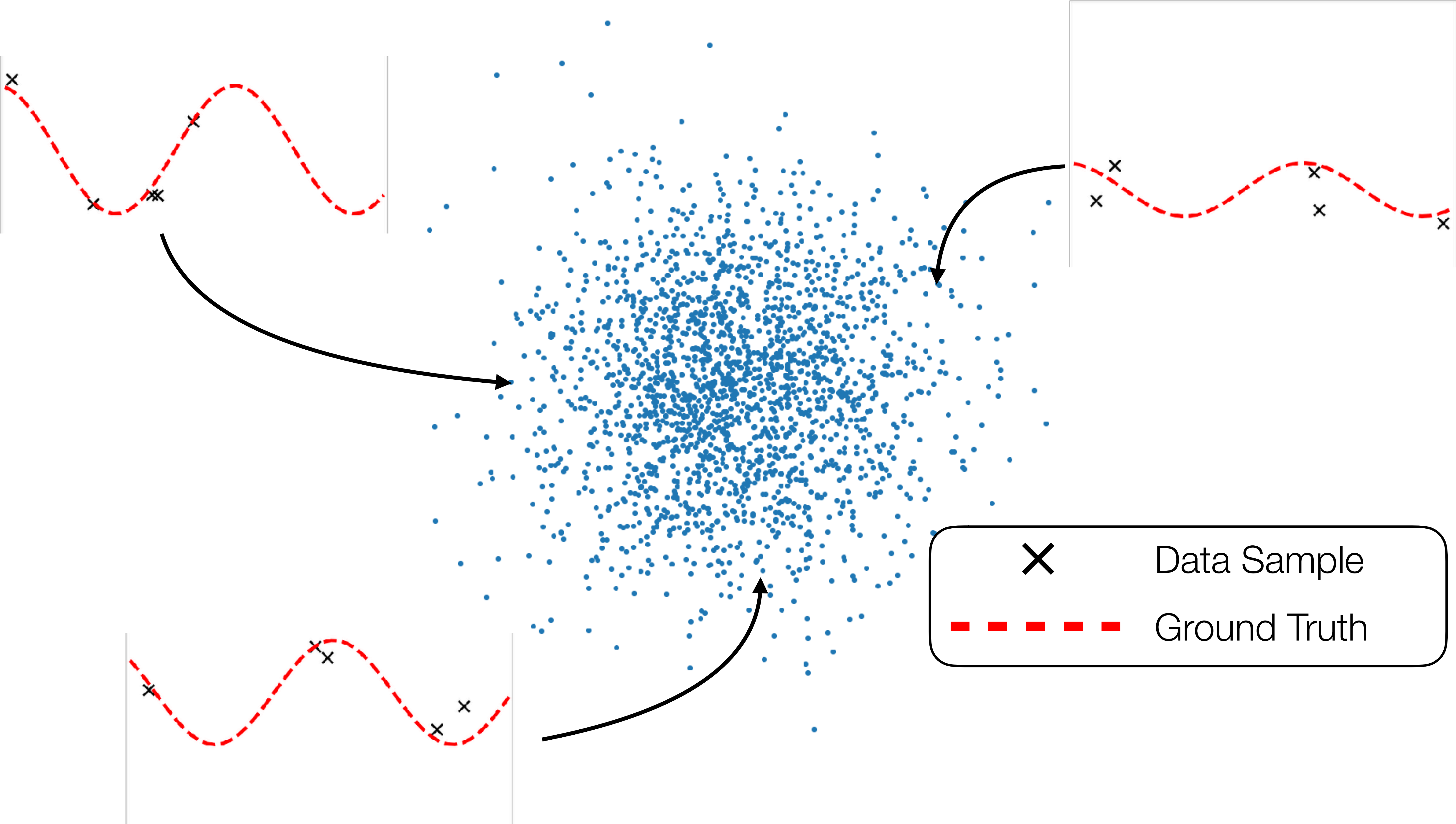


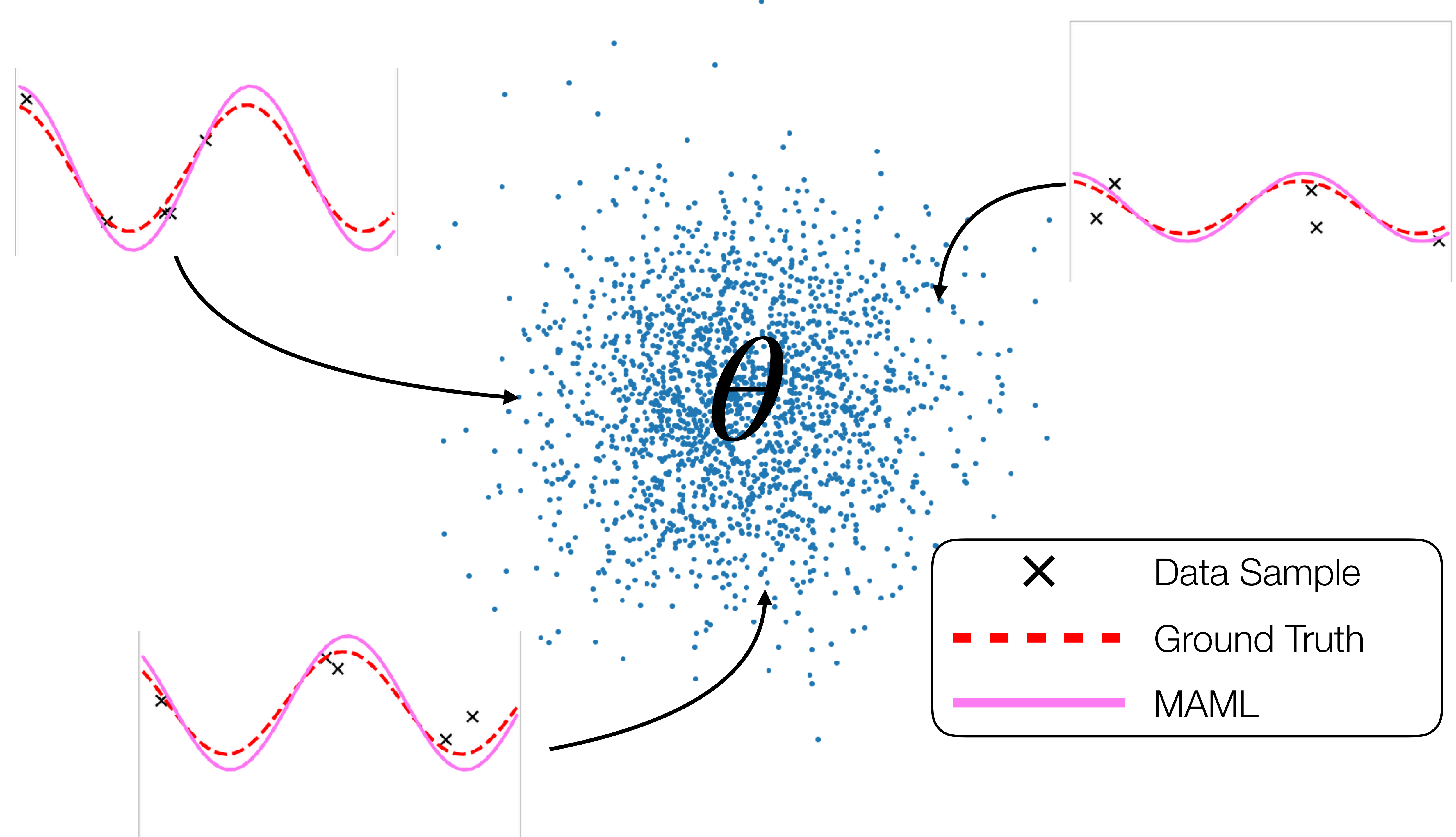
Joseph J. Lim



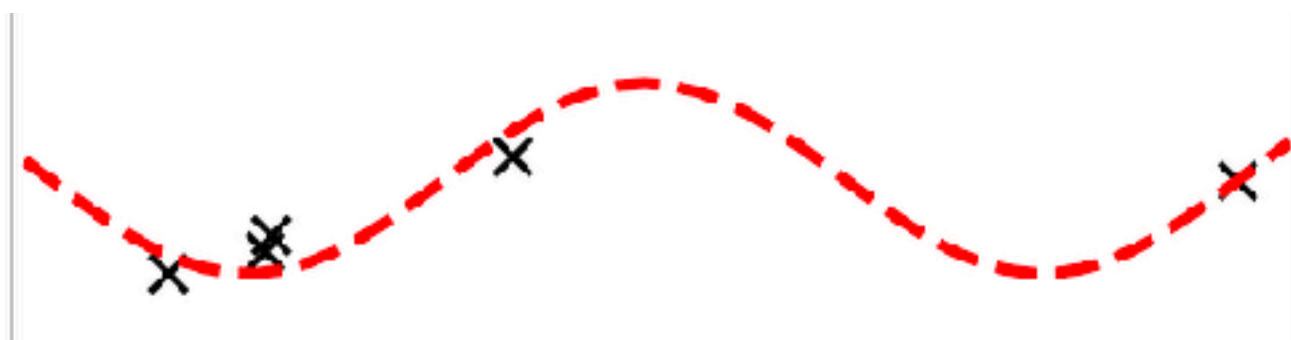




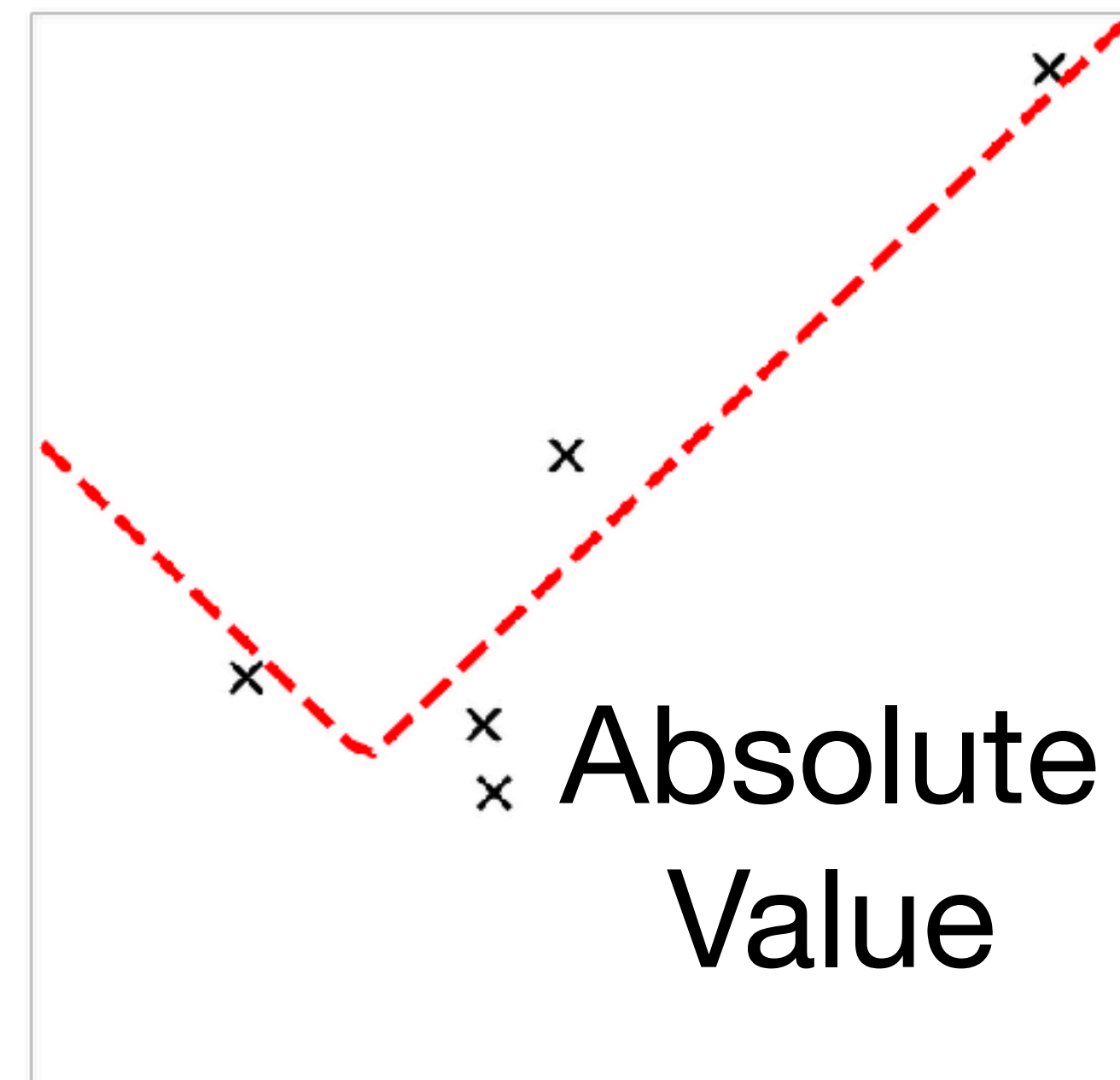




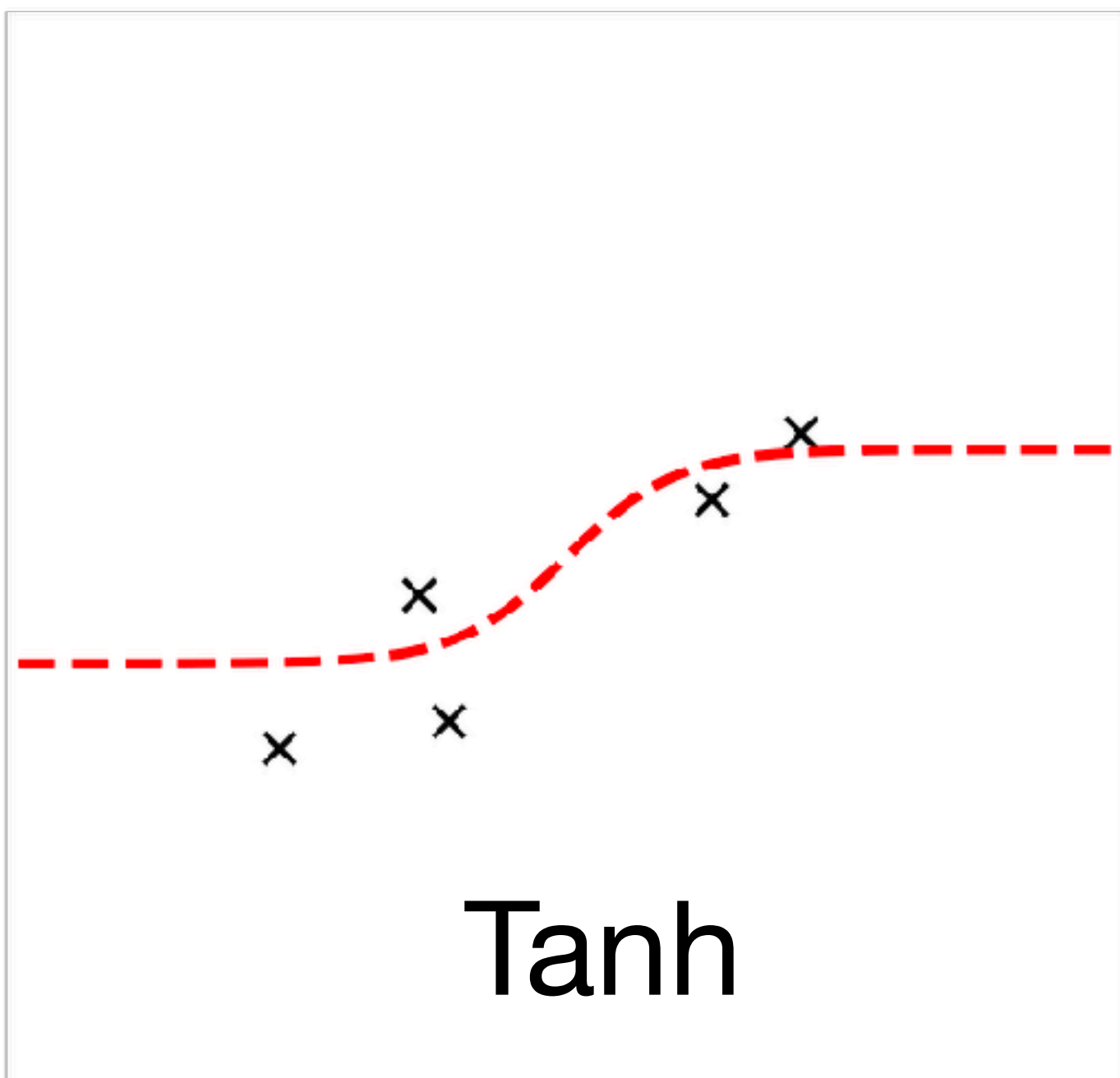
Sinusoid



Absolute Value



Tanh



x

Data Sample

Ground Truth

Sinusoid

Absolute
Value

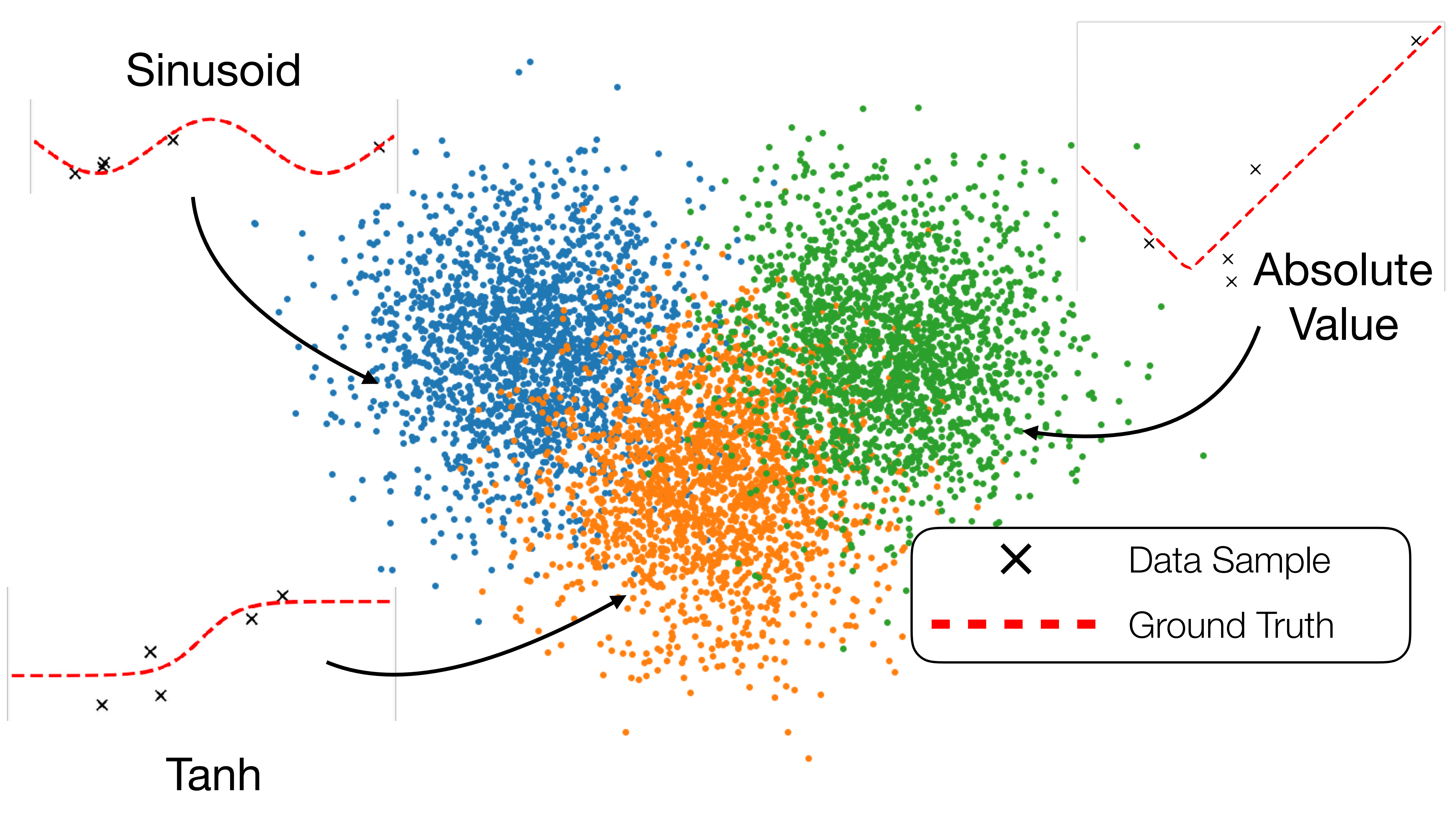
Tanh

×

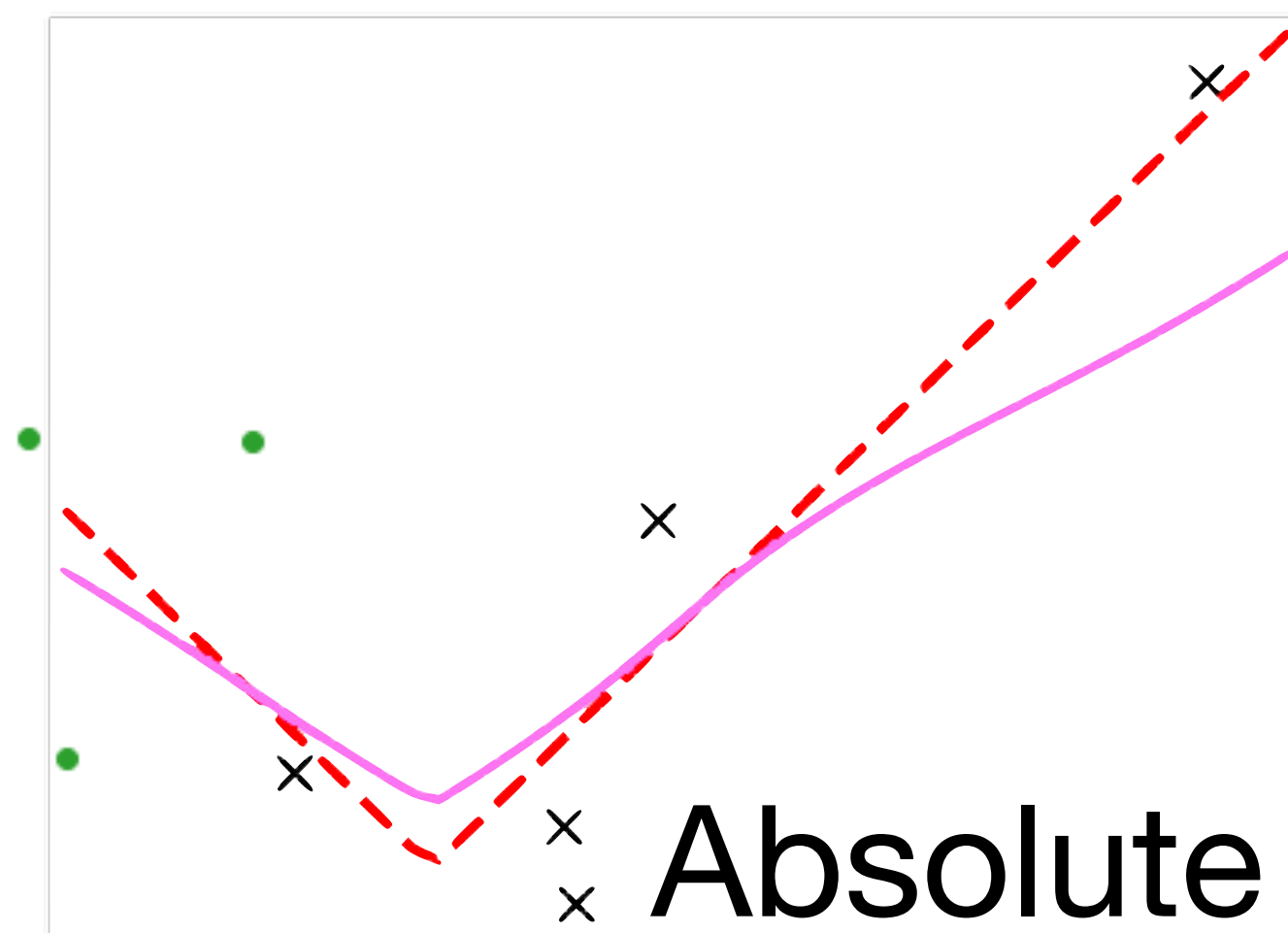
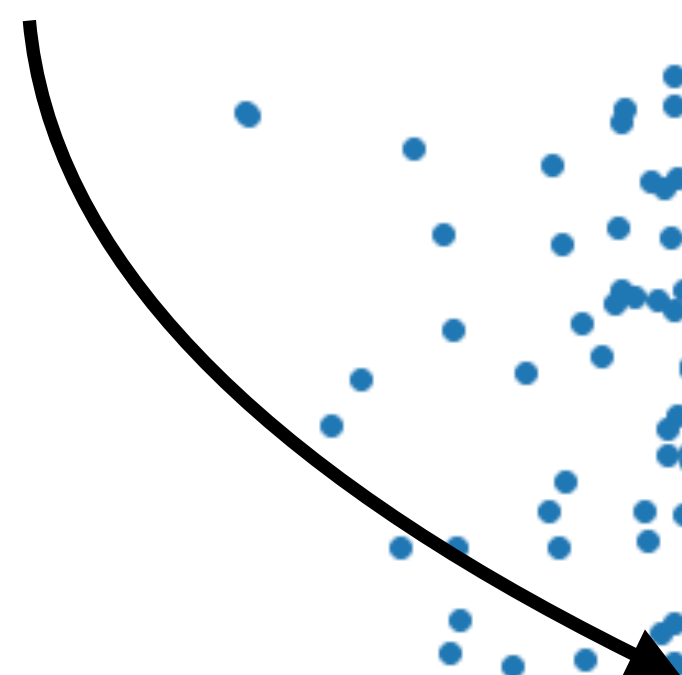
Data Sample

— — — — —

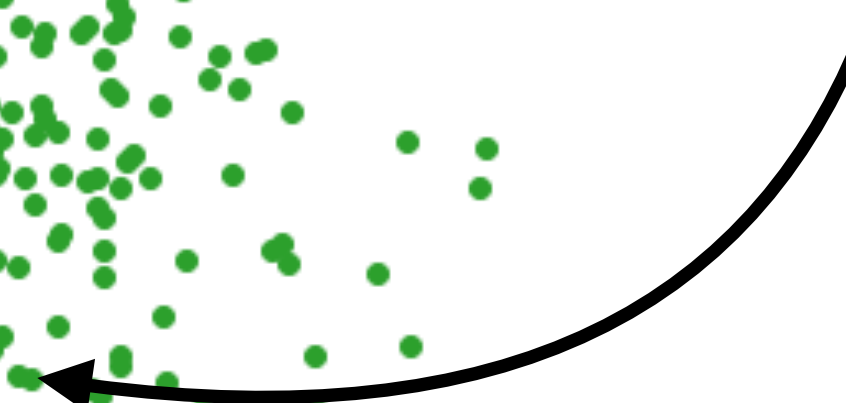
Ground Truth



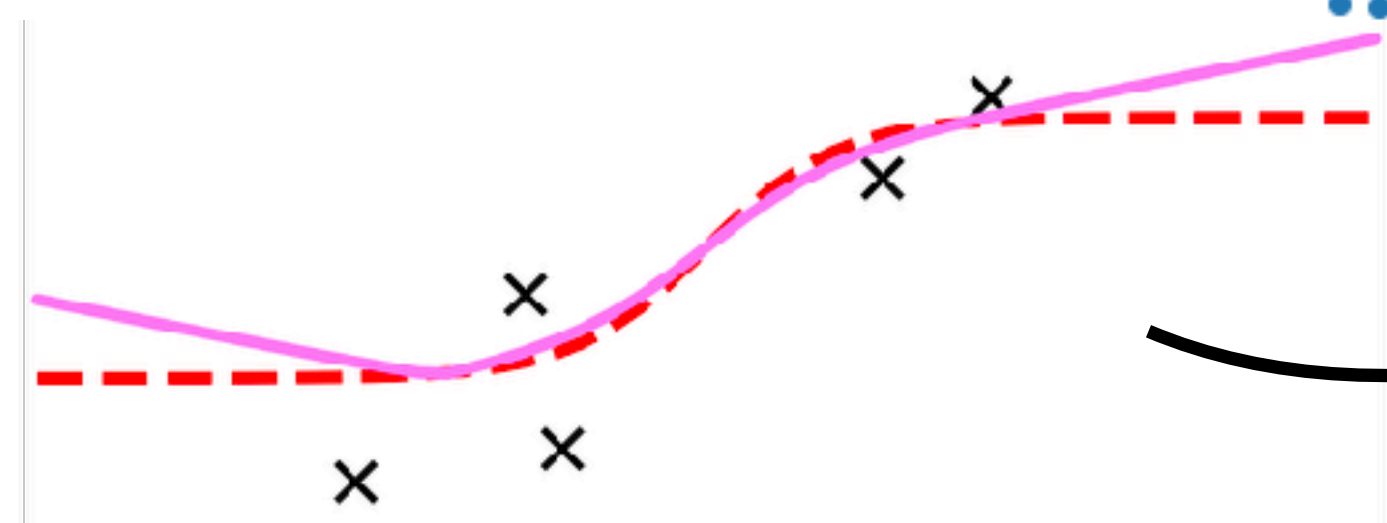
Sinusoid



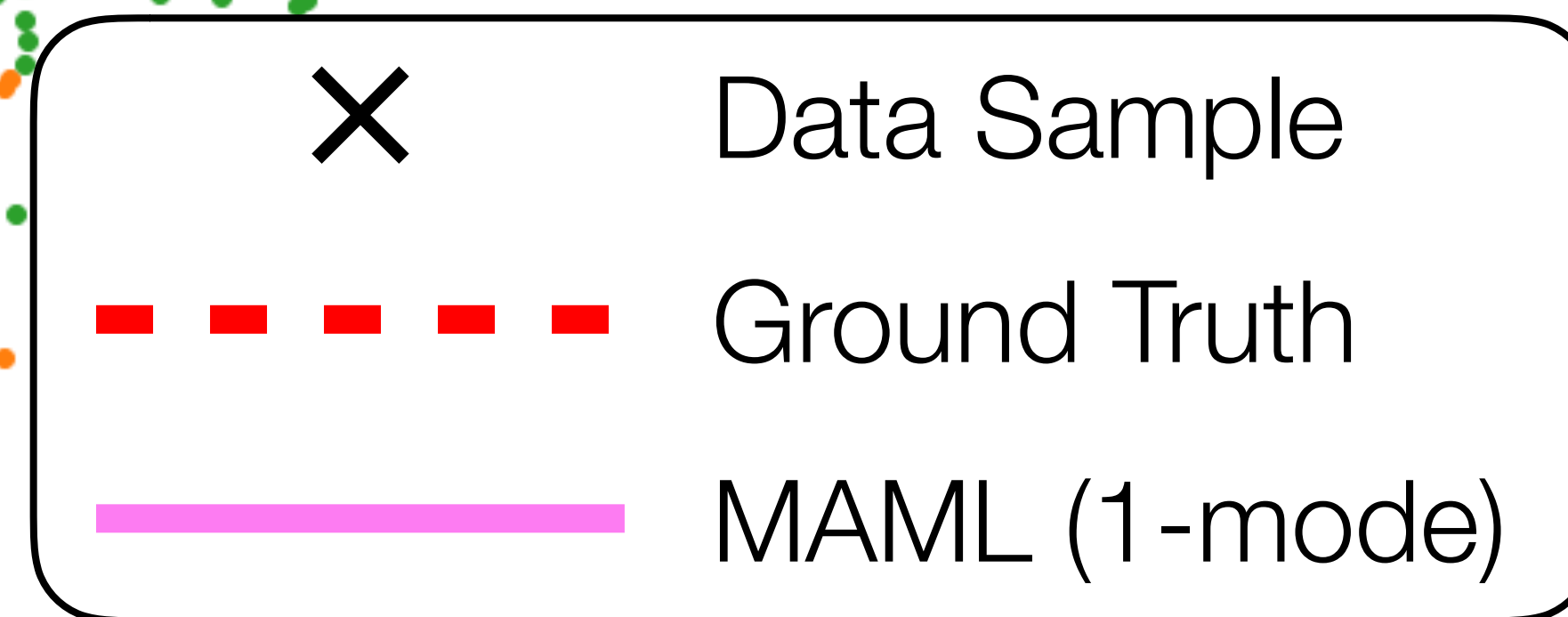
Absolute
Value



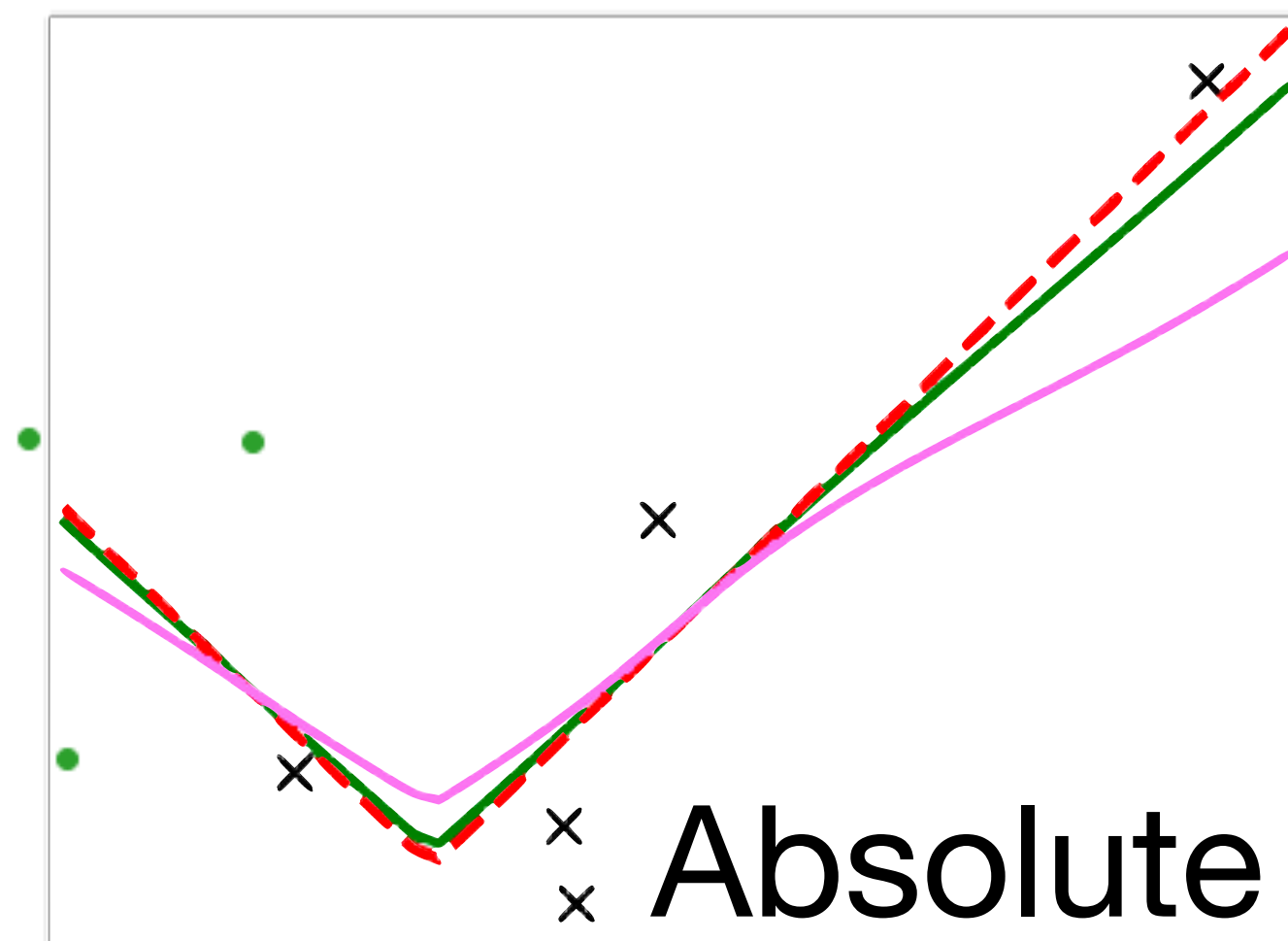
θ



Tanh



Sinusoid



Absolute
Value

θ_1

θ_2

θ_3

x

Data Sample

Ground Truth

Ground Truth

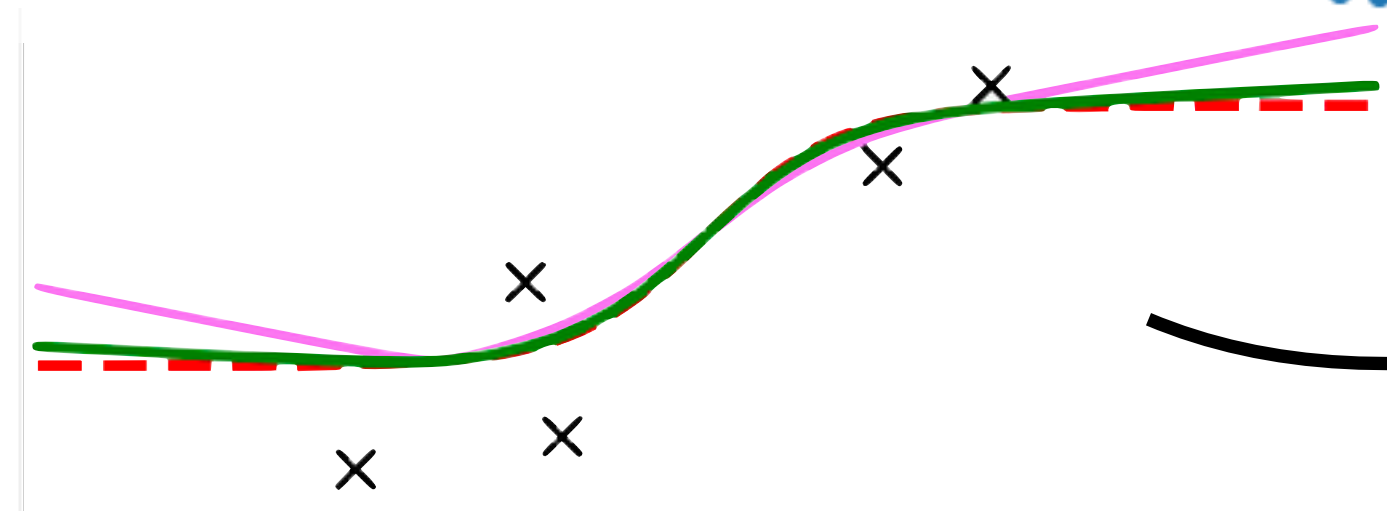
MAML (1-mode)

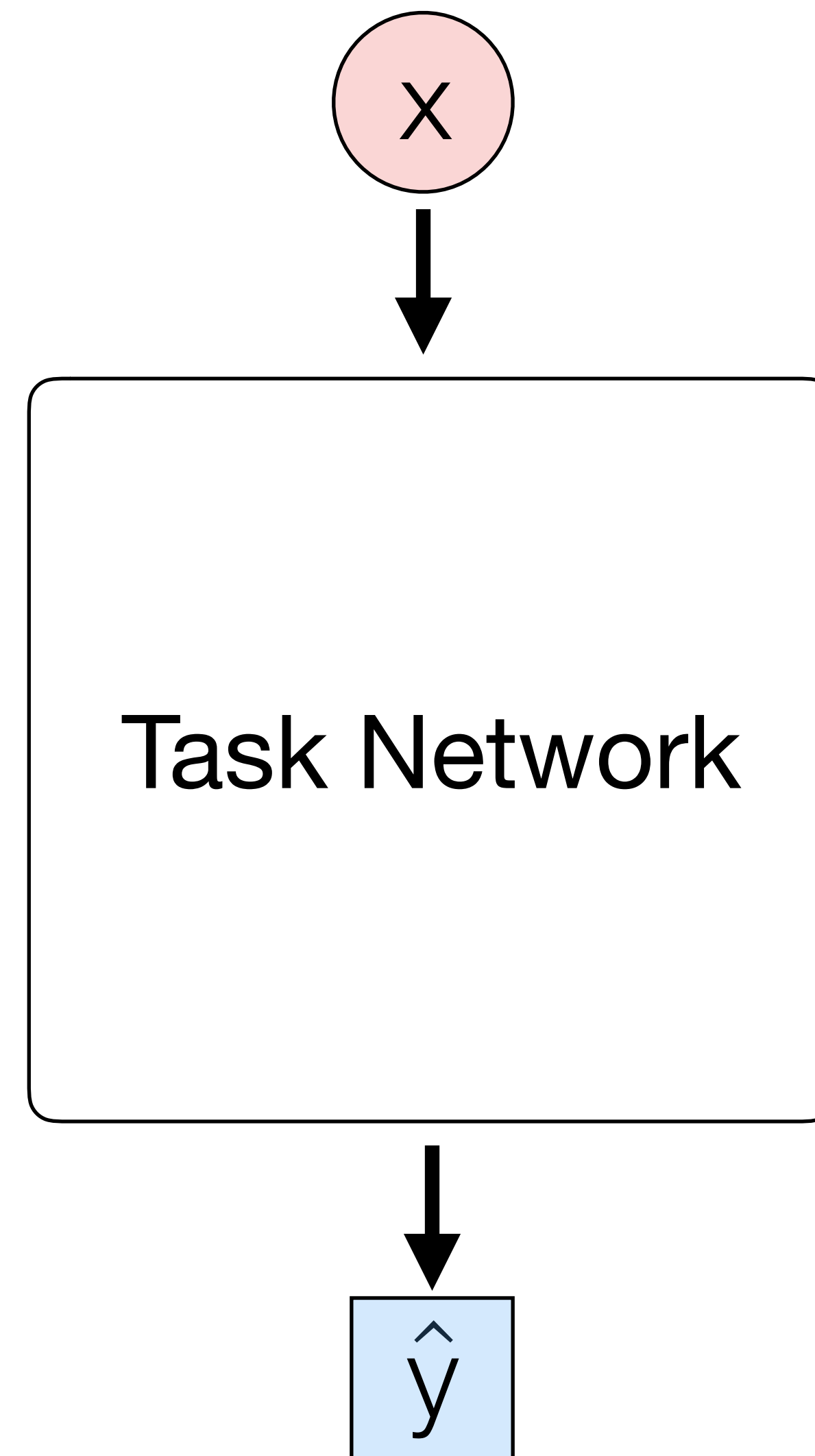
MAML (1-mode)

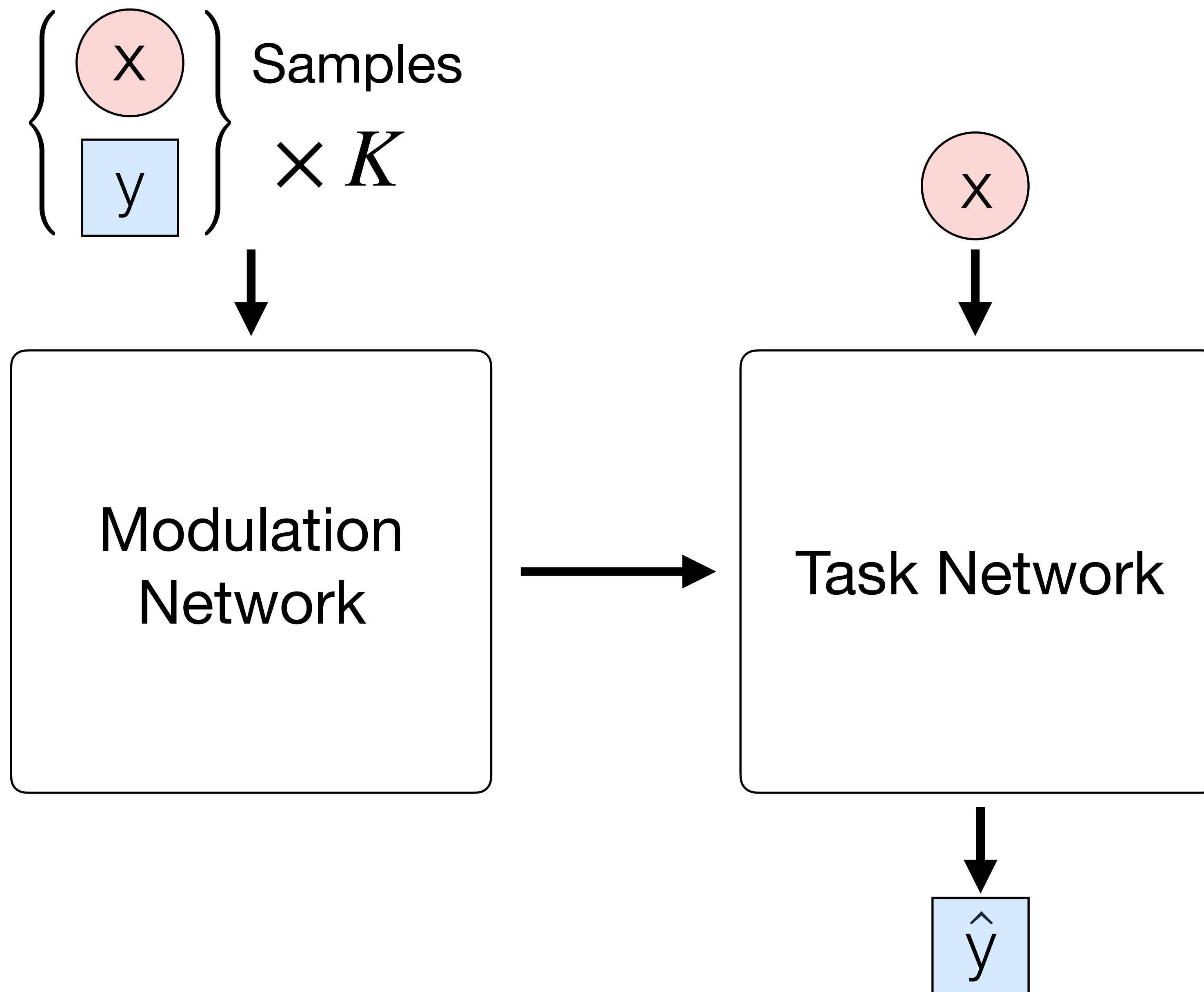
MAML (3-mode)

MAML (3-mode)

Tanh

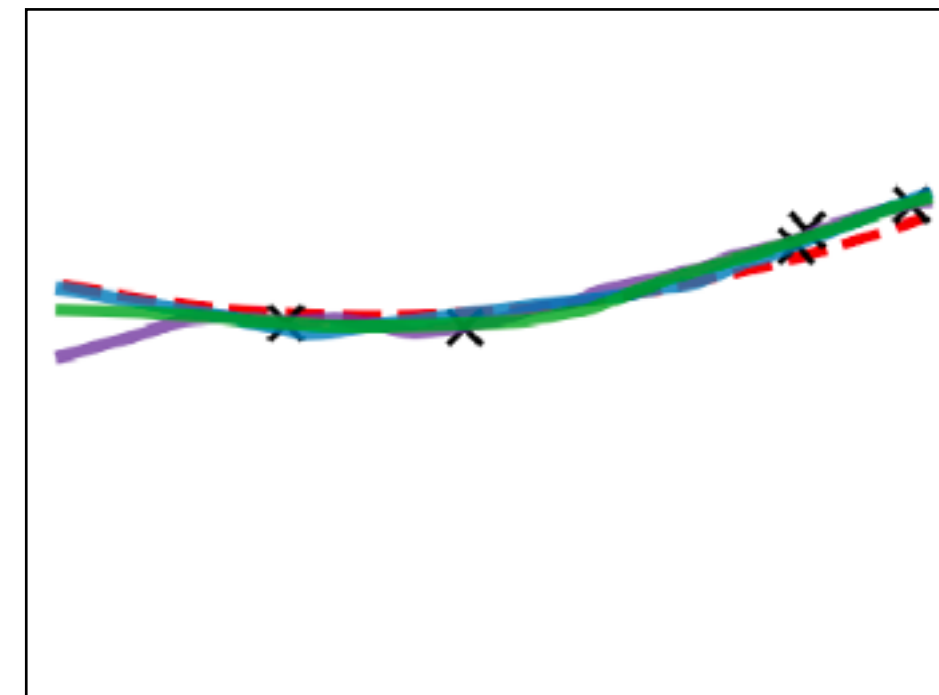
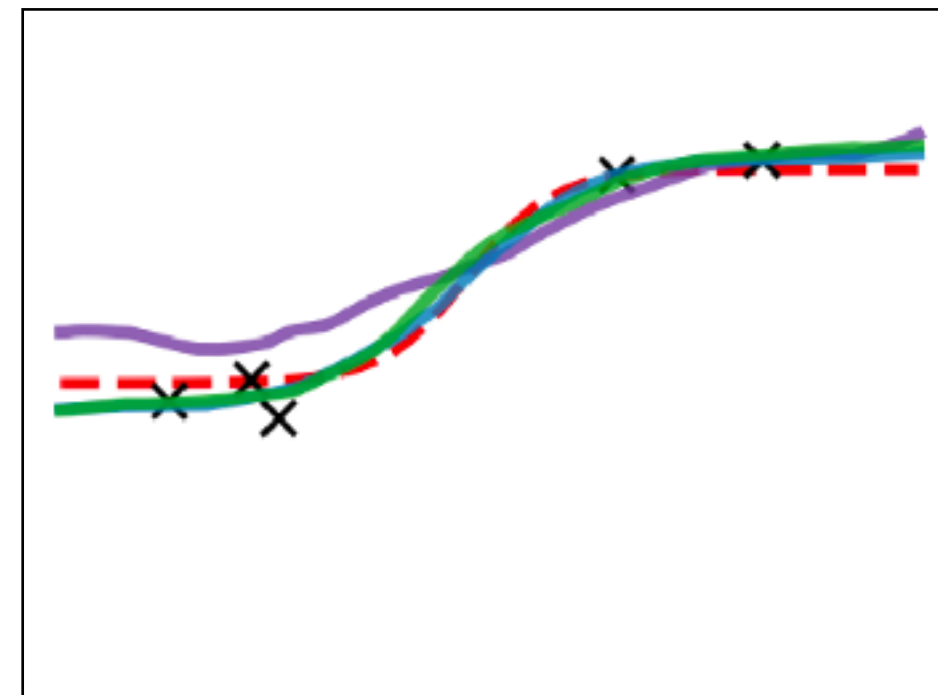
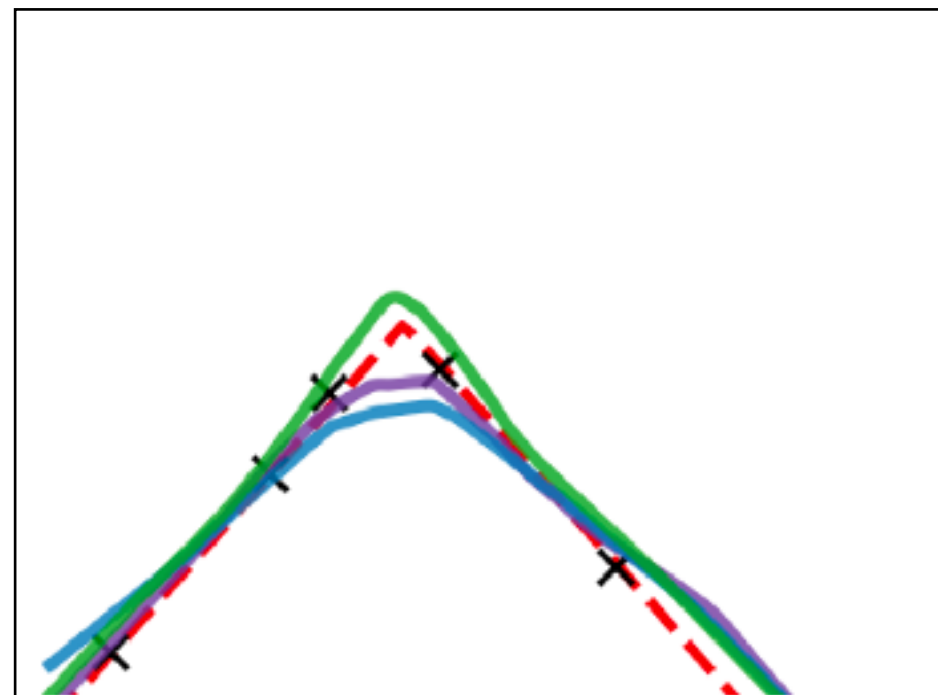
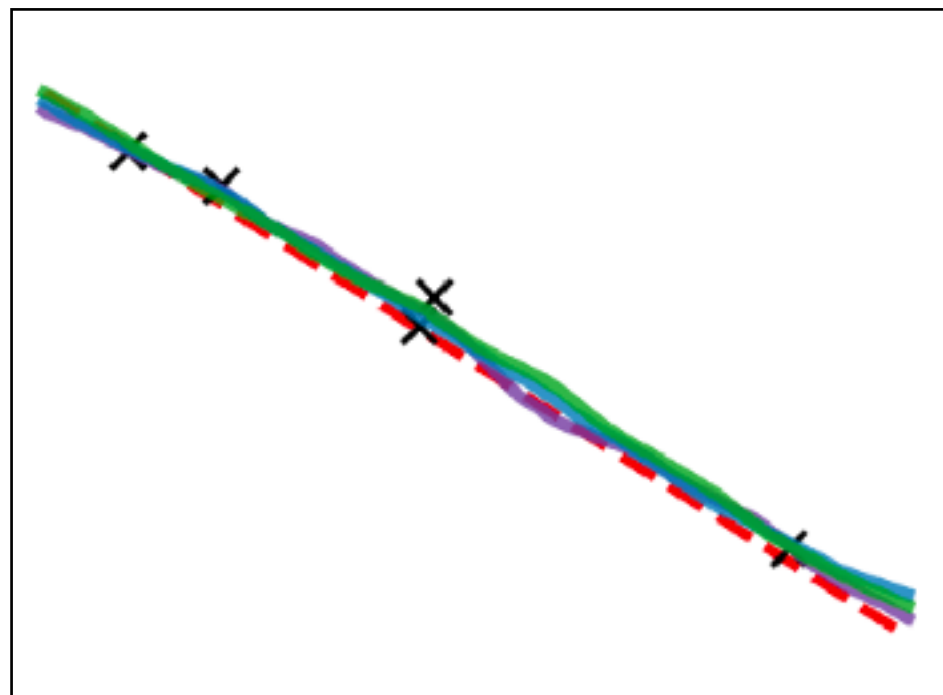
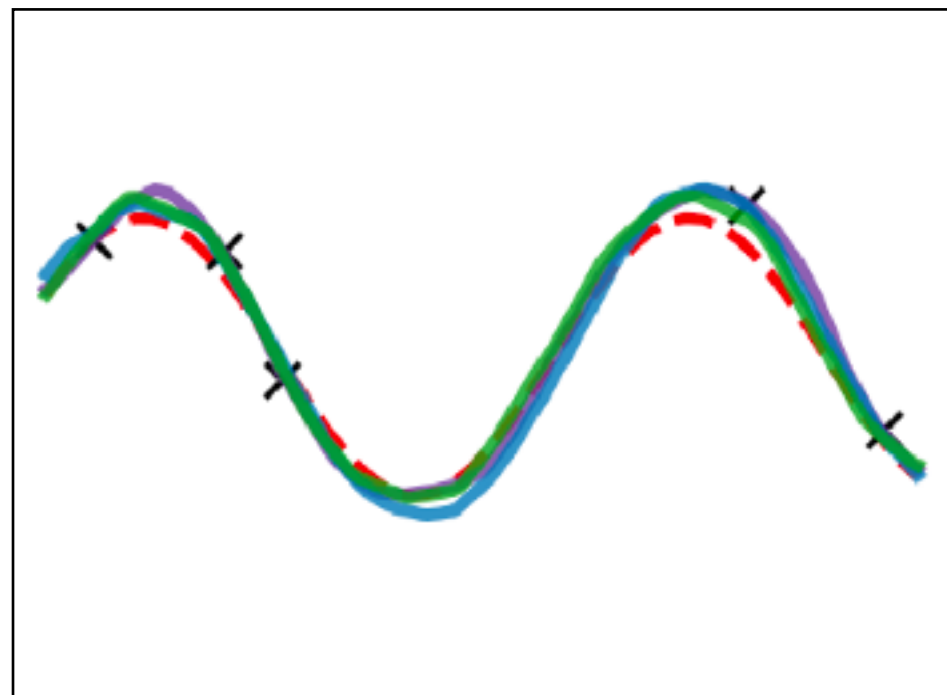






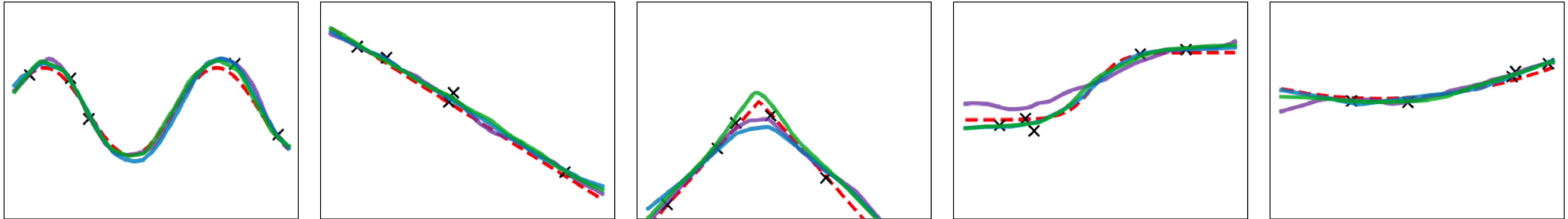
Evaluations: Regression

✕ Data Points - - - Ground Truth — MAML — MultiMAML — MMAML



Evaluations: Regression

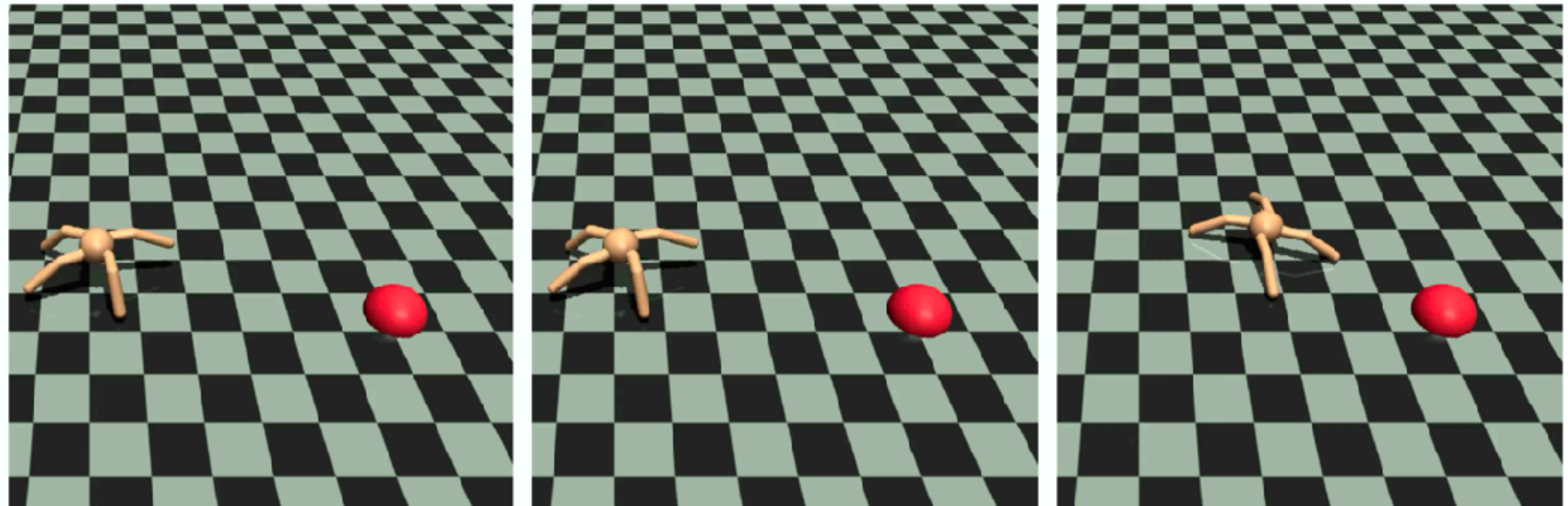
✕ Data Points - - - Ground Truth — MAML — MultiMAML — MMAML



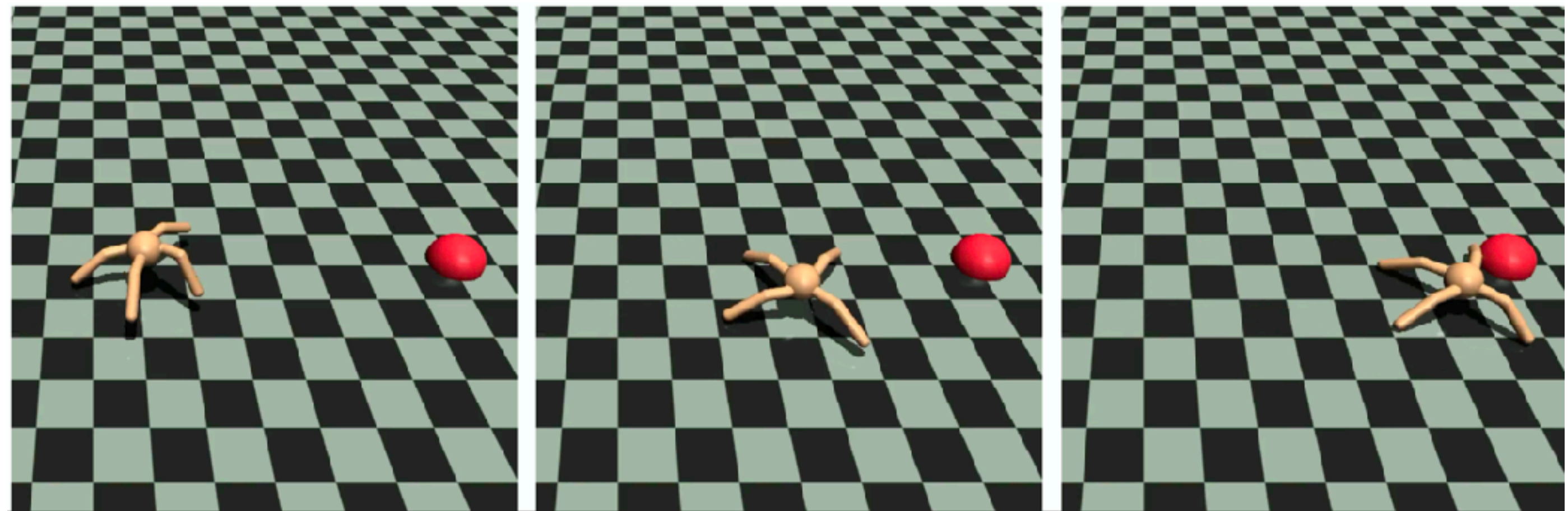
MAML	1.668
Ours	0.868

Evaluations: Reinforcement Learning

ProMP

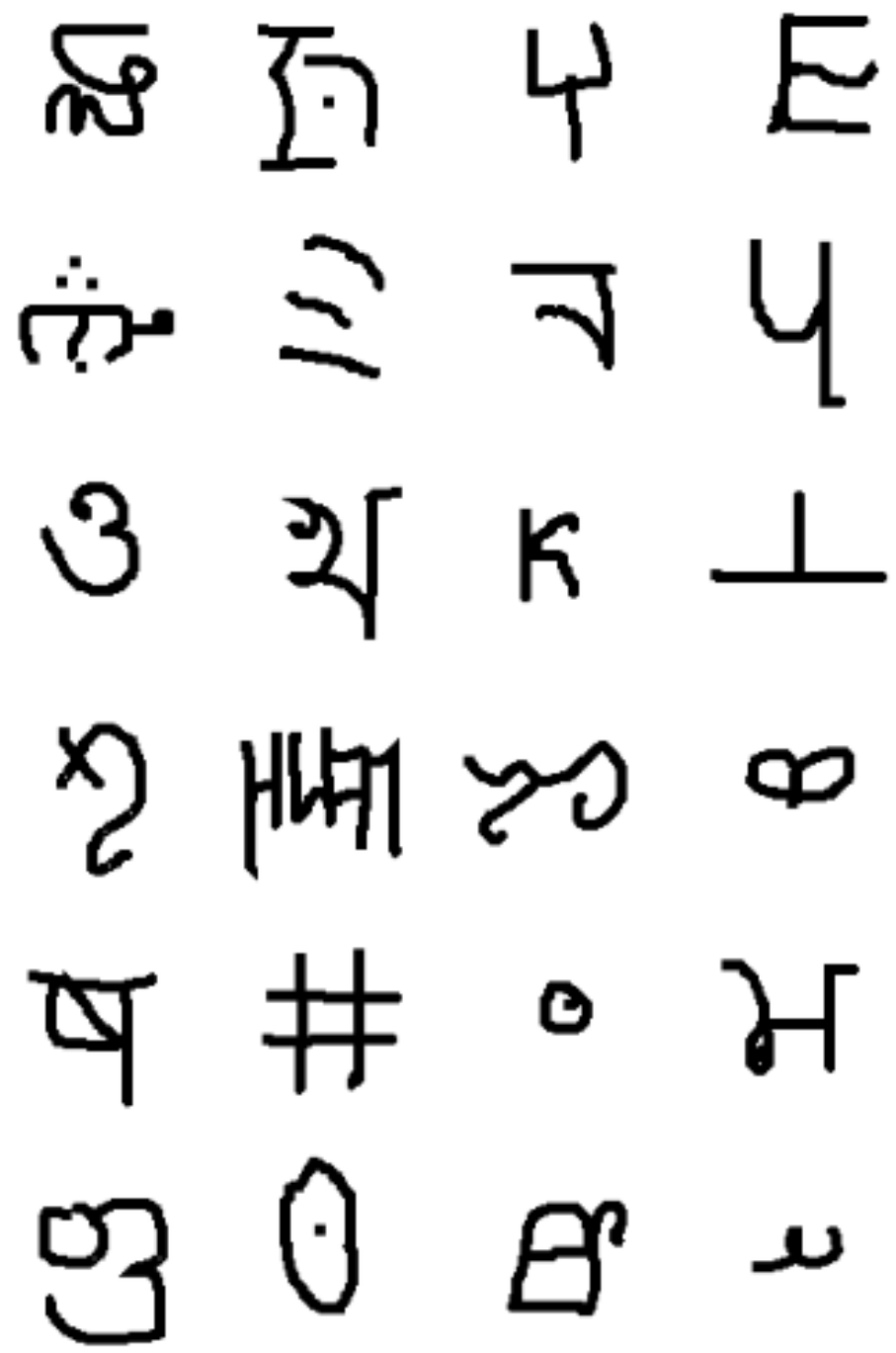


Ours



Evaluations: Classification

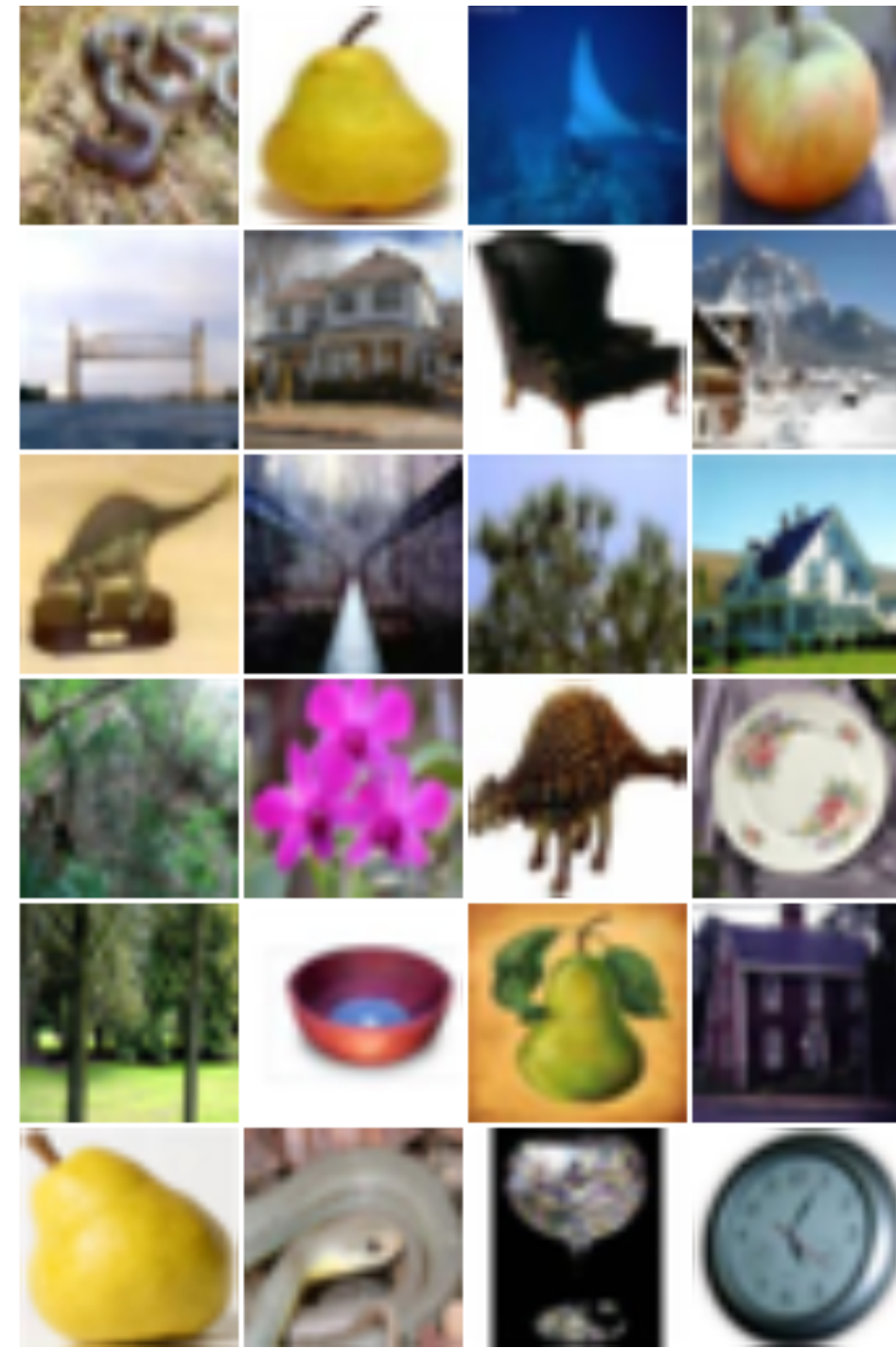
(a) Omniglot



(b) Mini-ImageNet



(c) FC100



(d) CUB

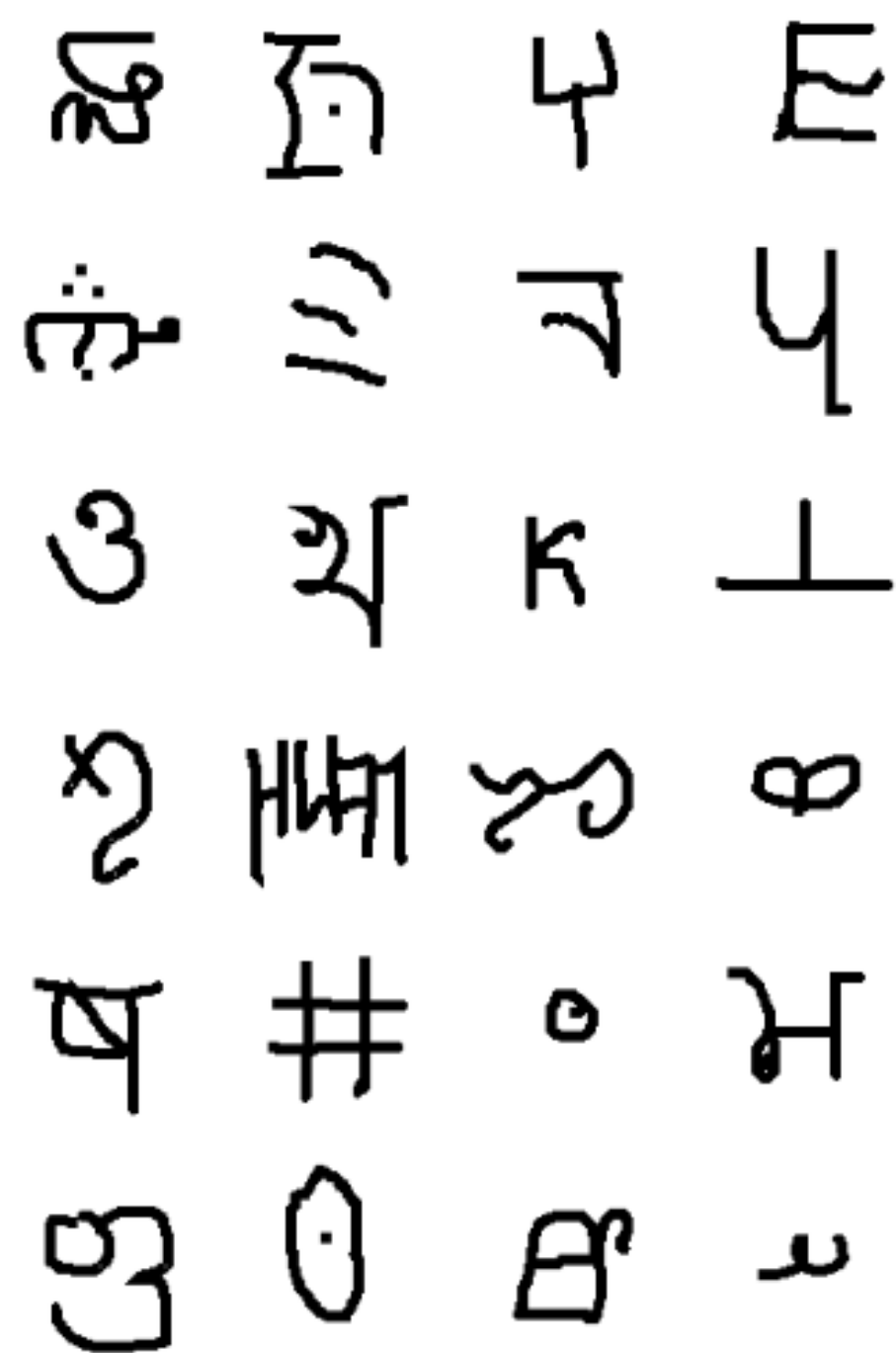


(e) Aircraft

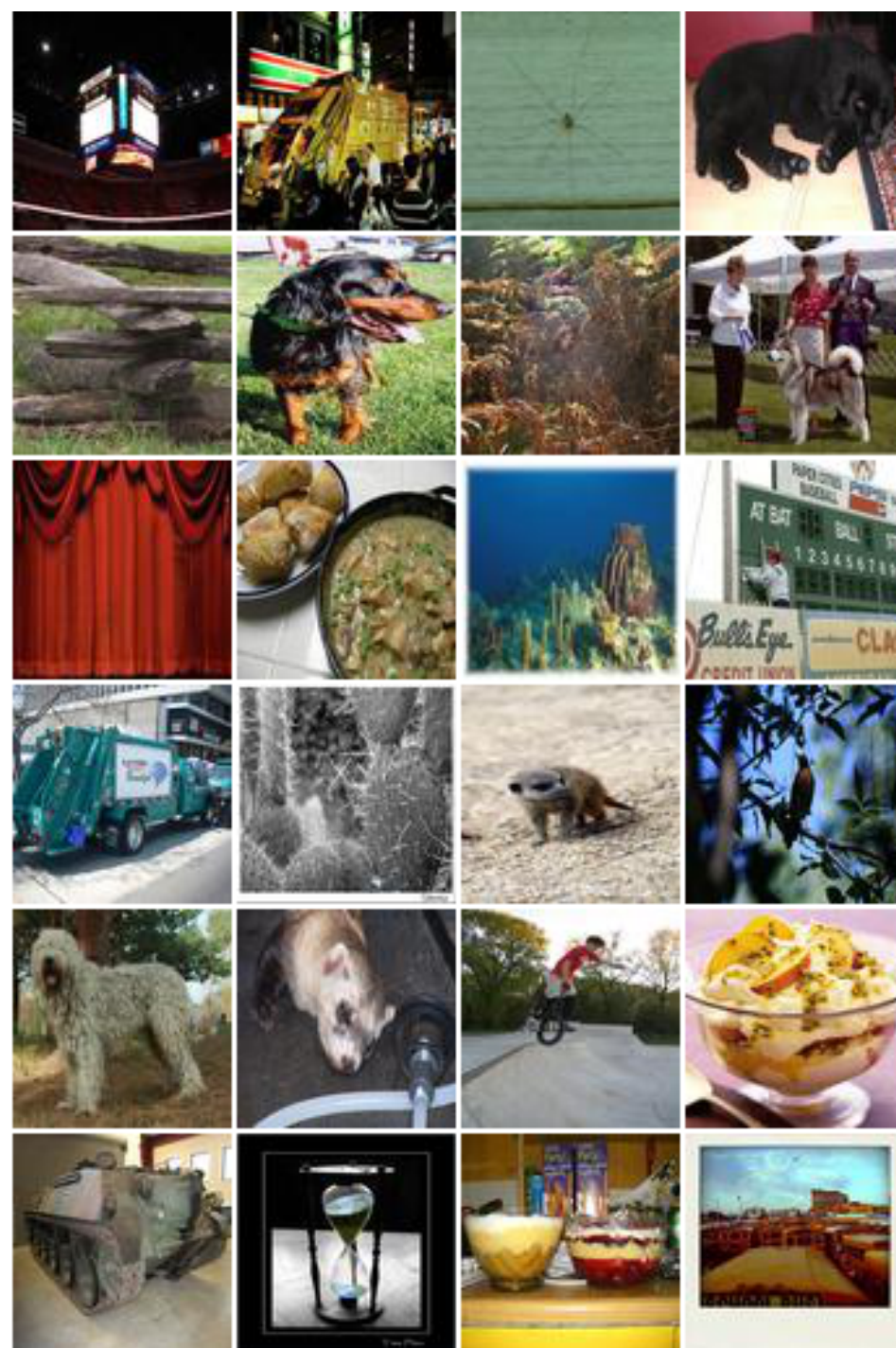


Evaluations: Classification

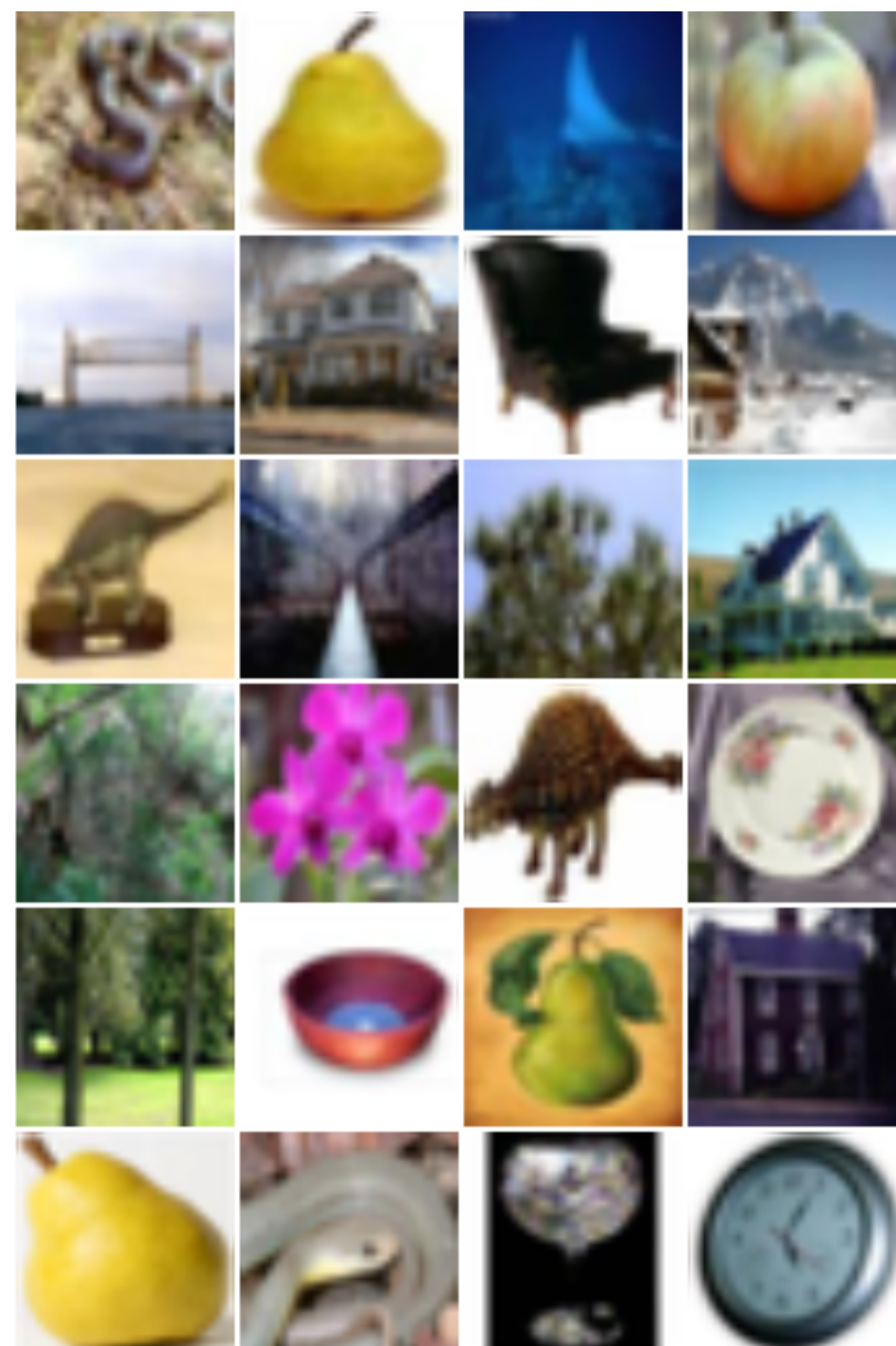
(a) Omniglot



(b) Mini-ImageNet



(c) FC100



(d) CUB



(e) Aircraft



MAML	54.41%
Ours	60.83%

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