

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

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



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Shao-Hua Sun\*



Hexiang Hu

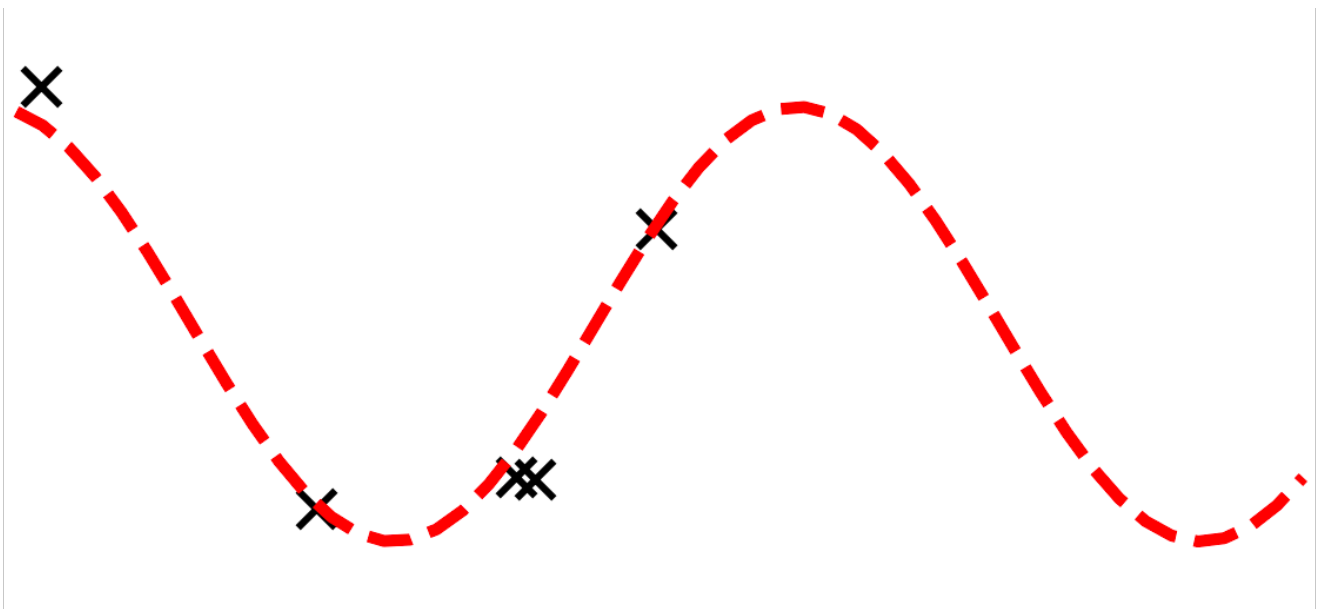


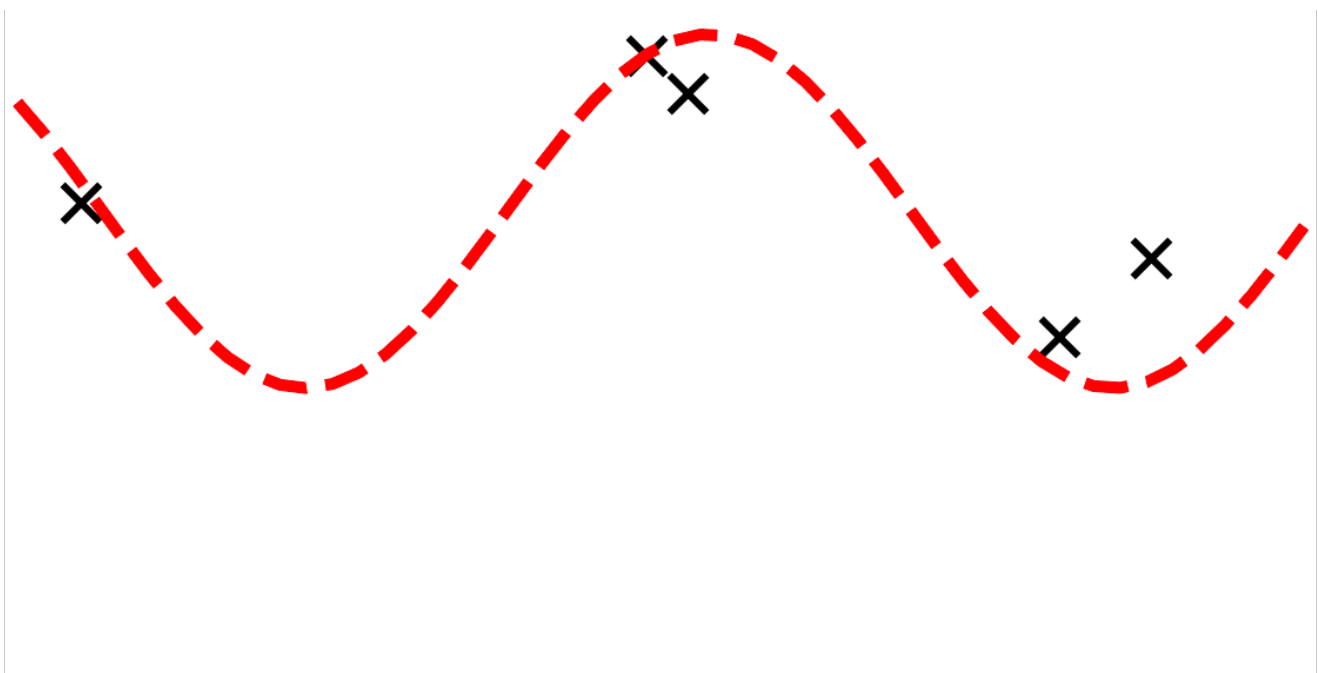
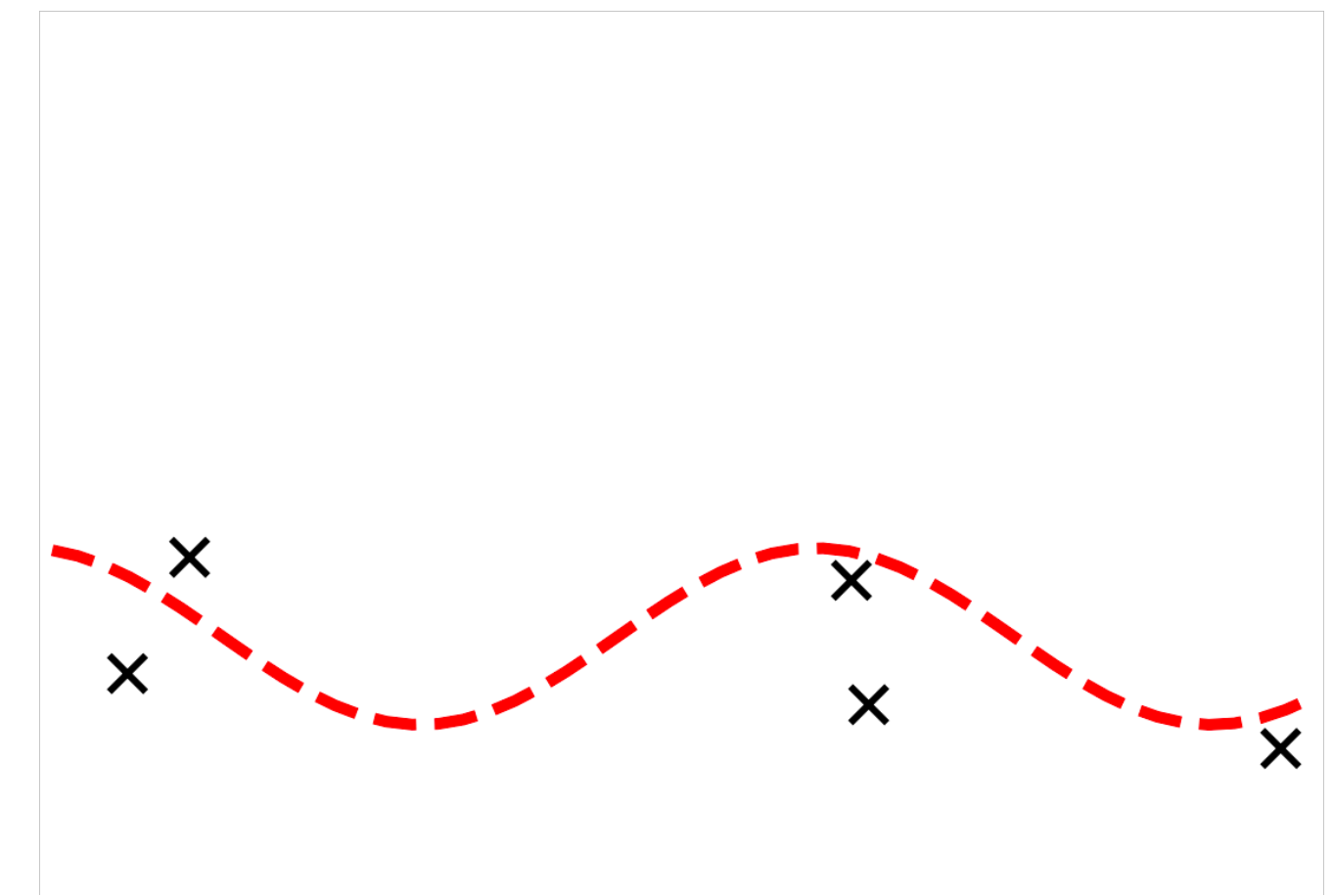
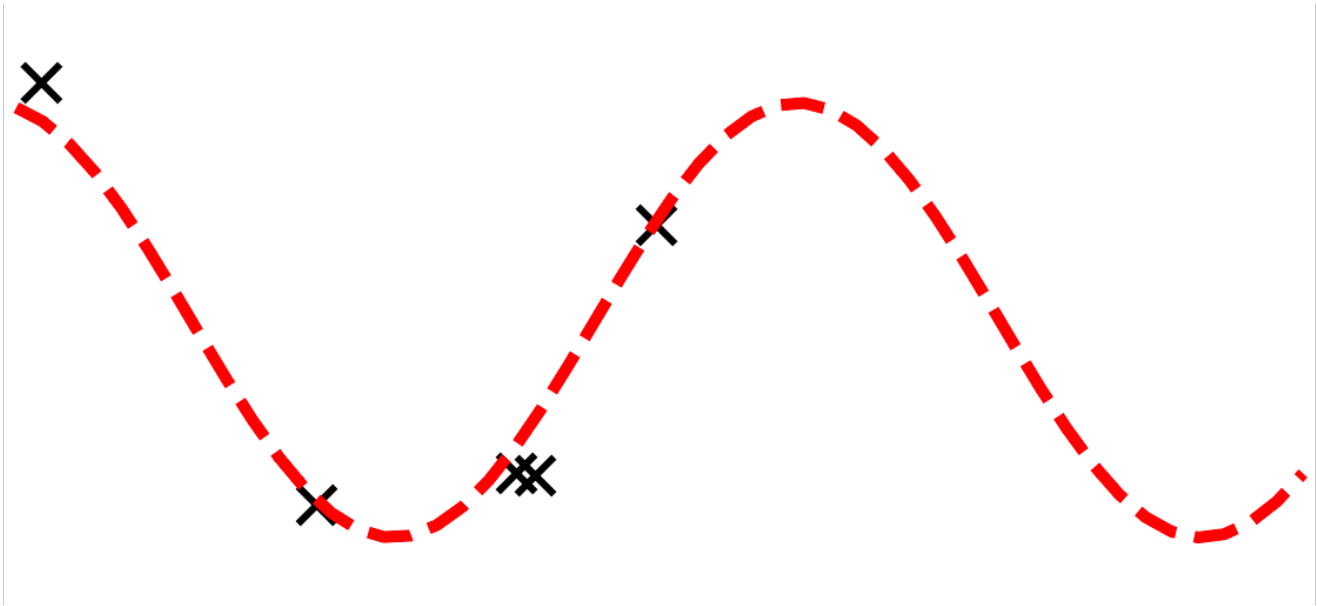
Joseph J. Lim



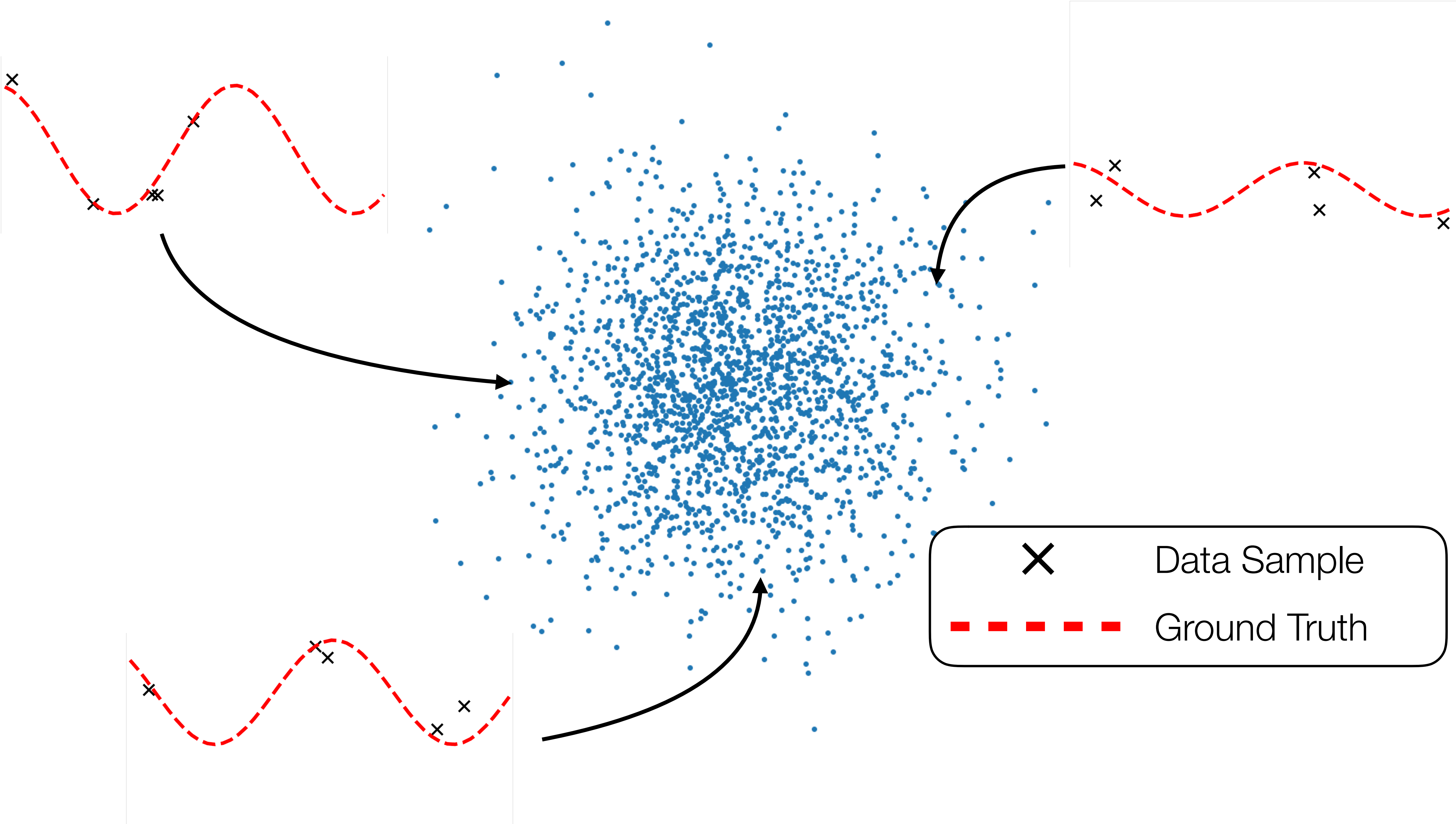




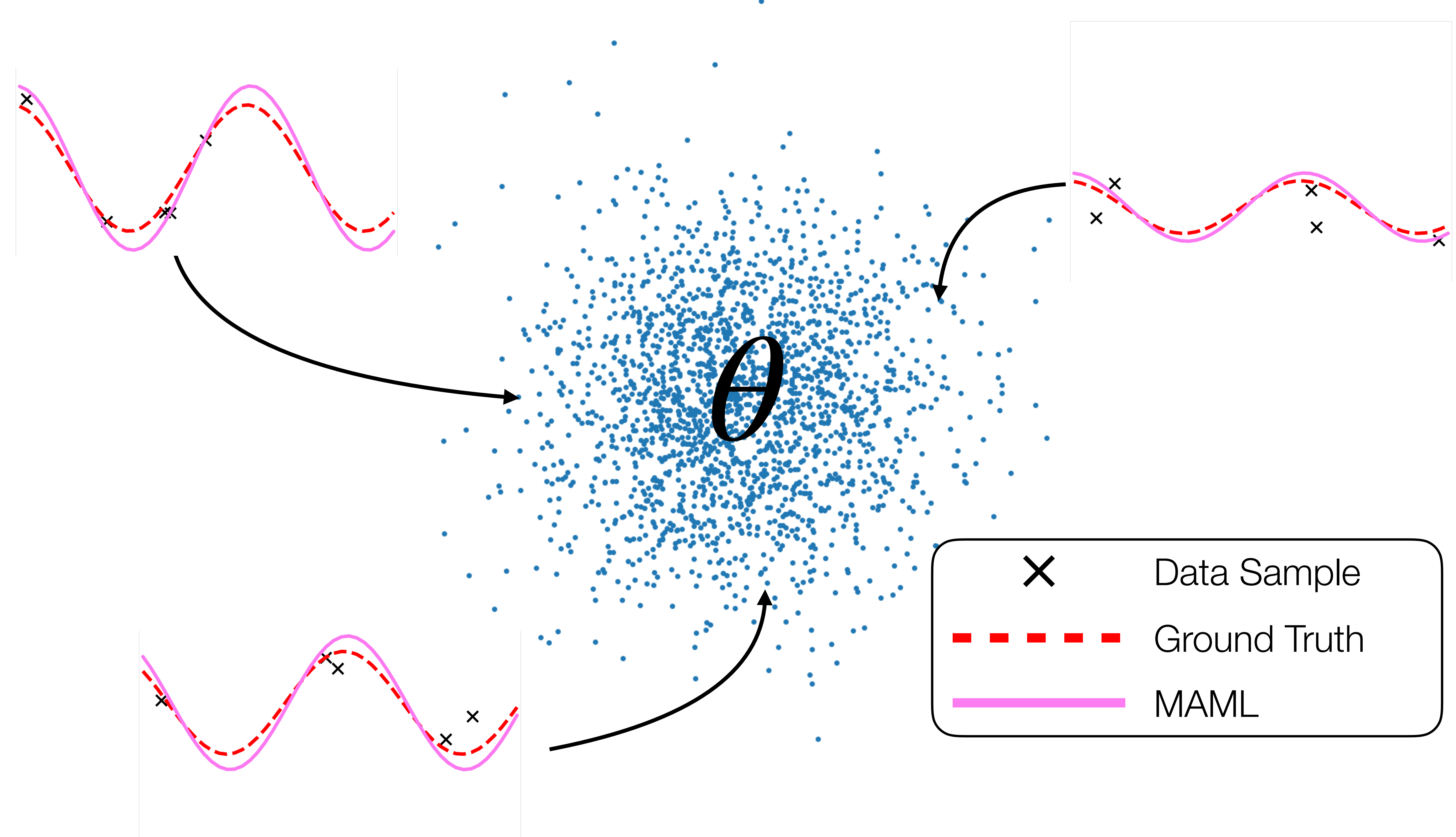






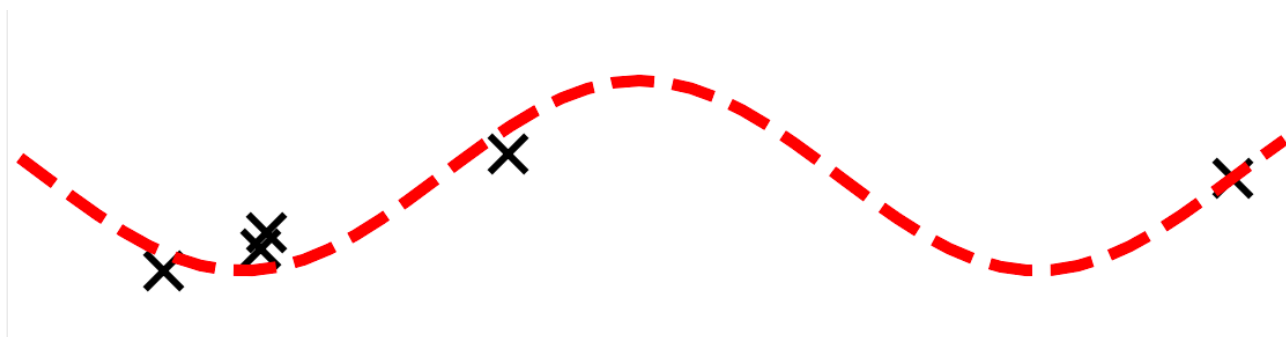




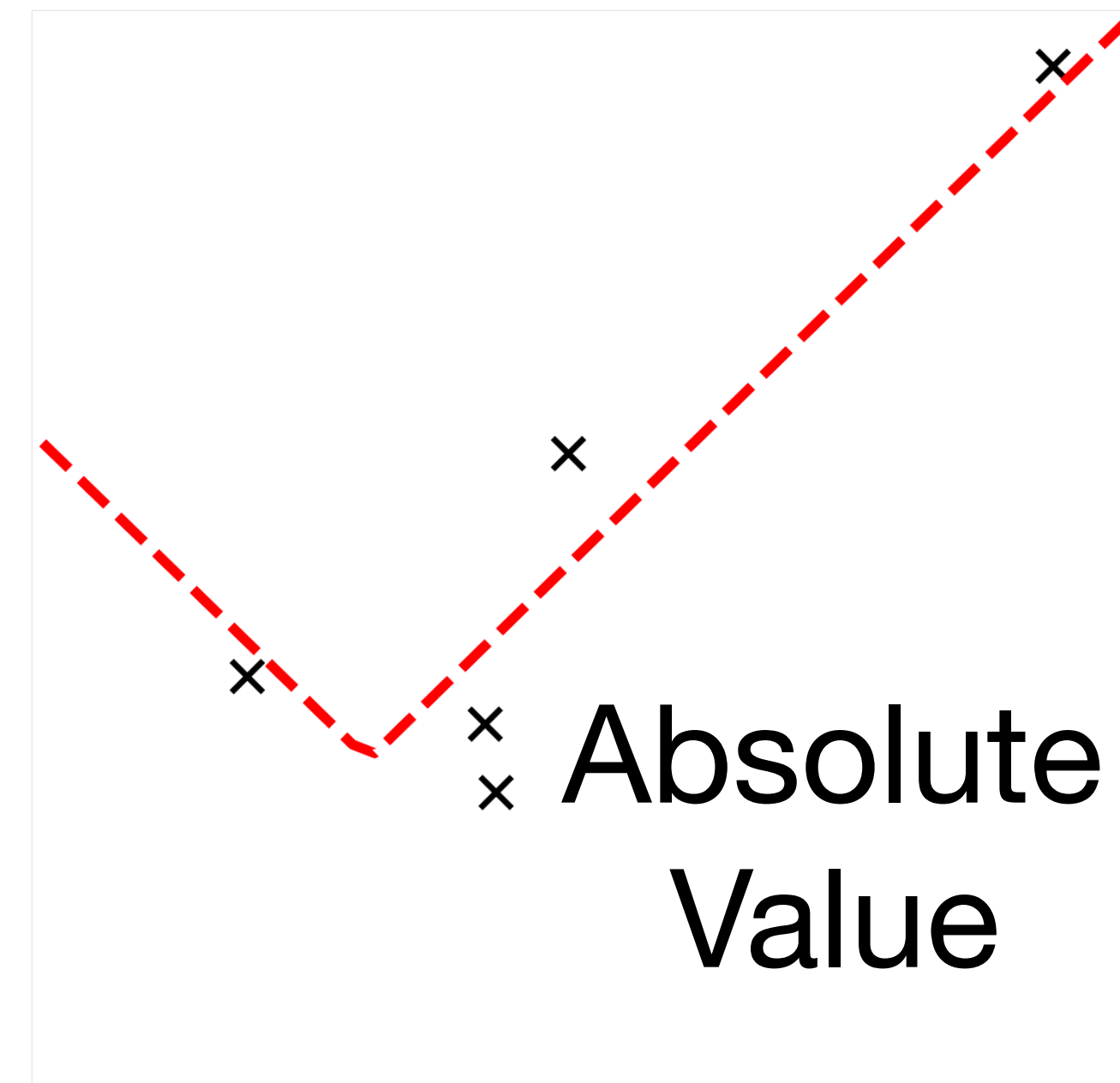




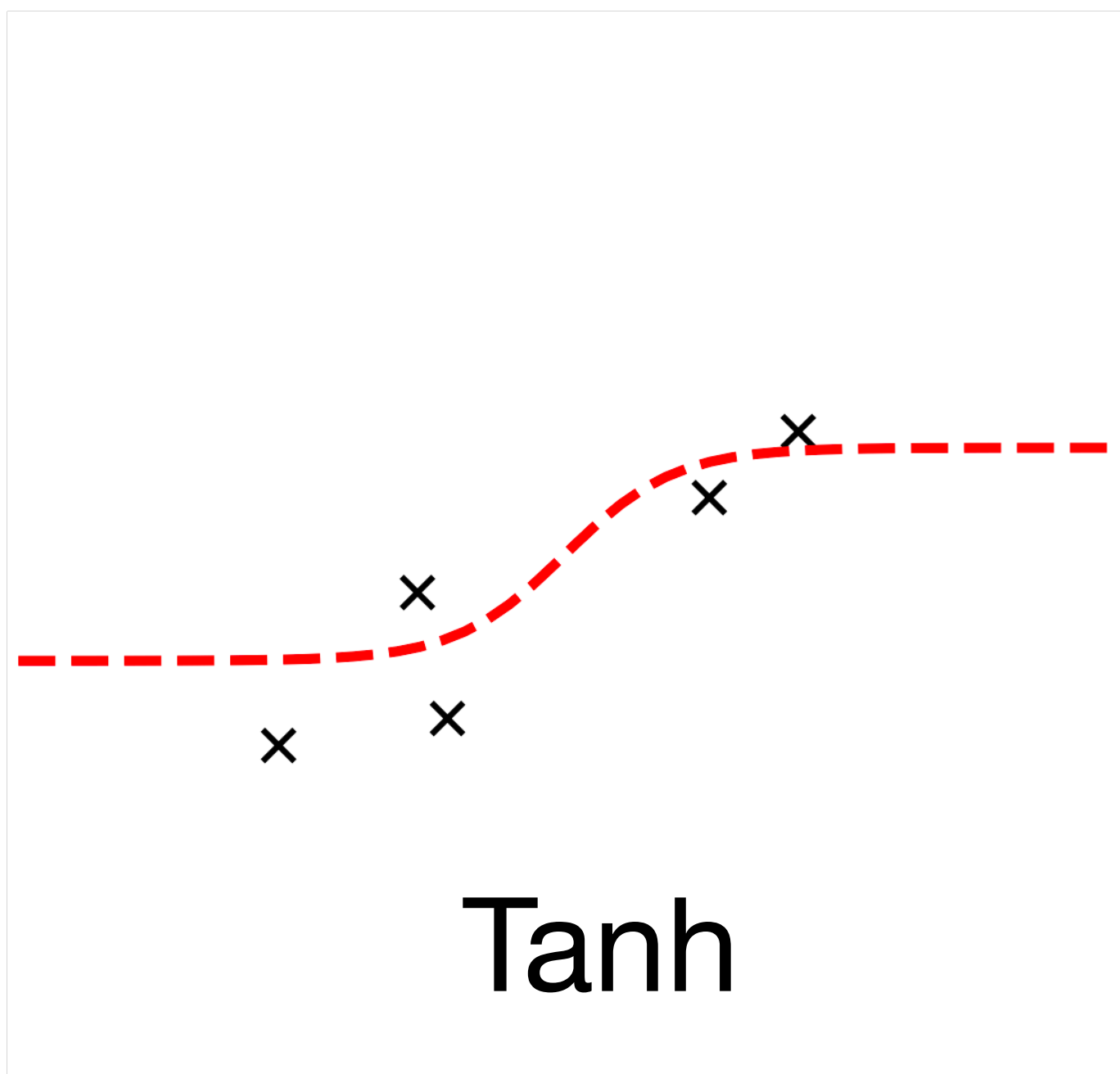
# Sinusoid



# Absolute Value



# Tanh



x

Data Sample

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Ground Truth



Sinusoid

Absolute  
Value

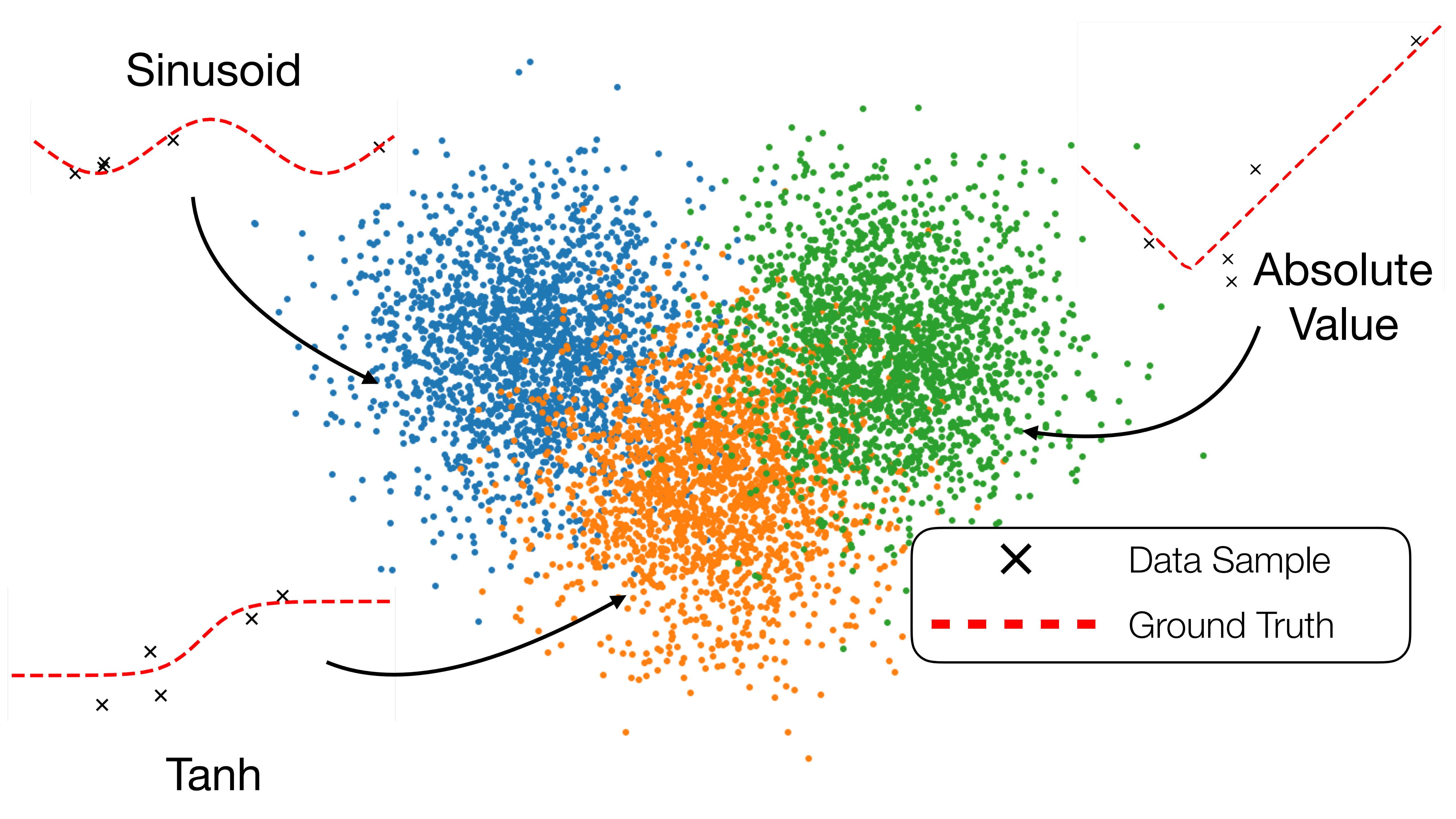
Tanh

×

Data Sample

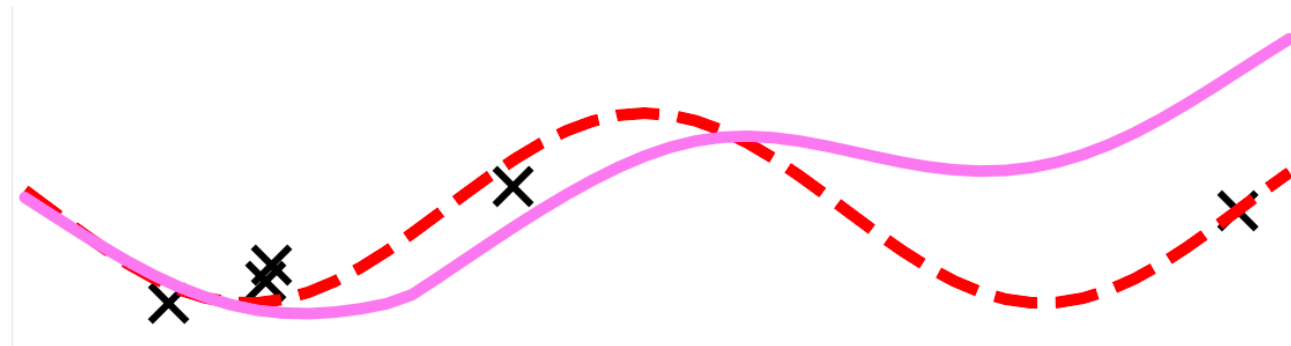
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Ground Truth

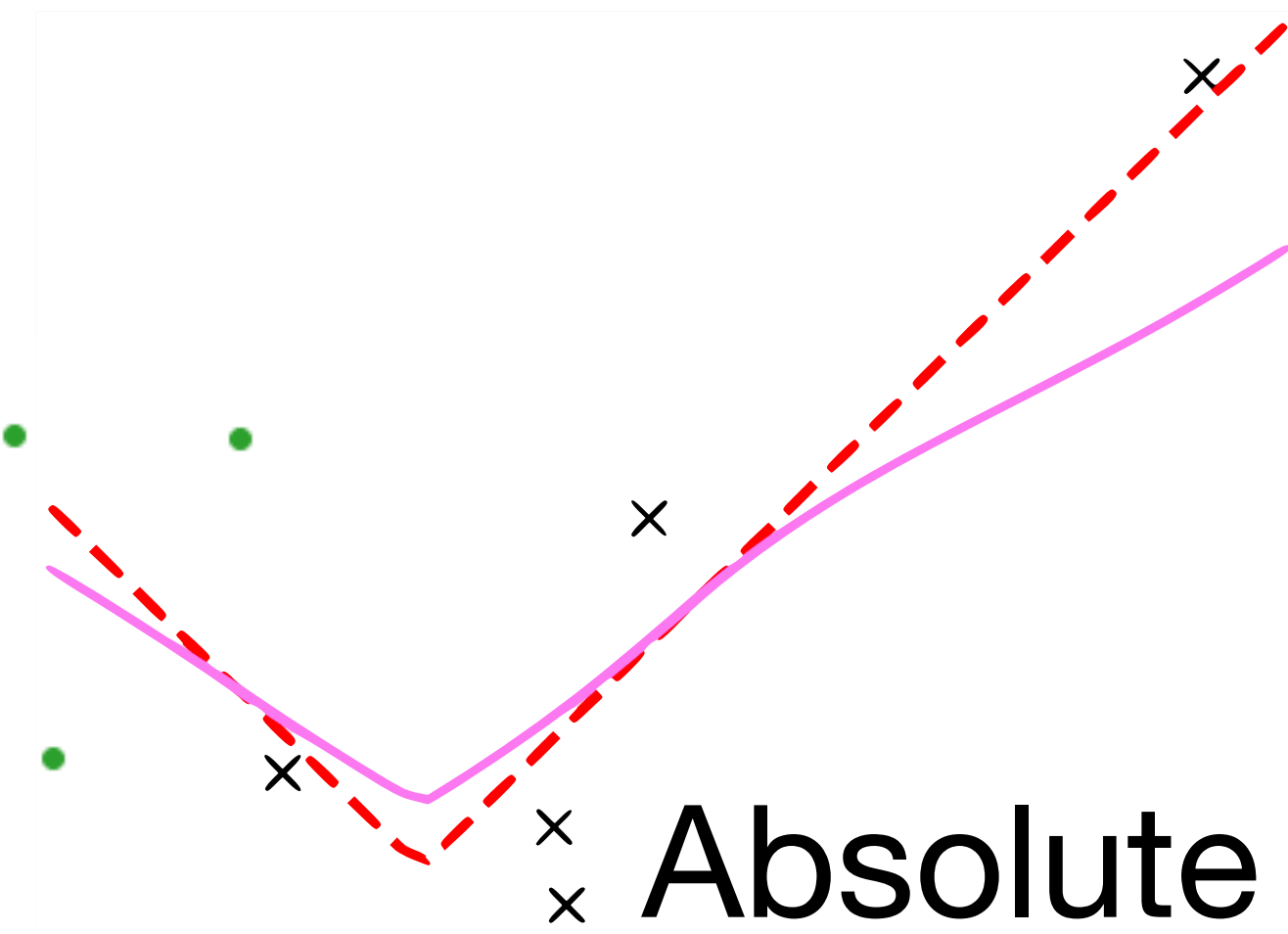




Sinusoid



Absolute  
Value



$\theta$

x

Data Sample

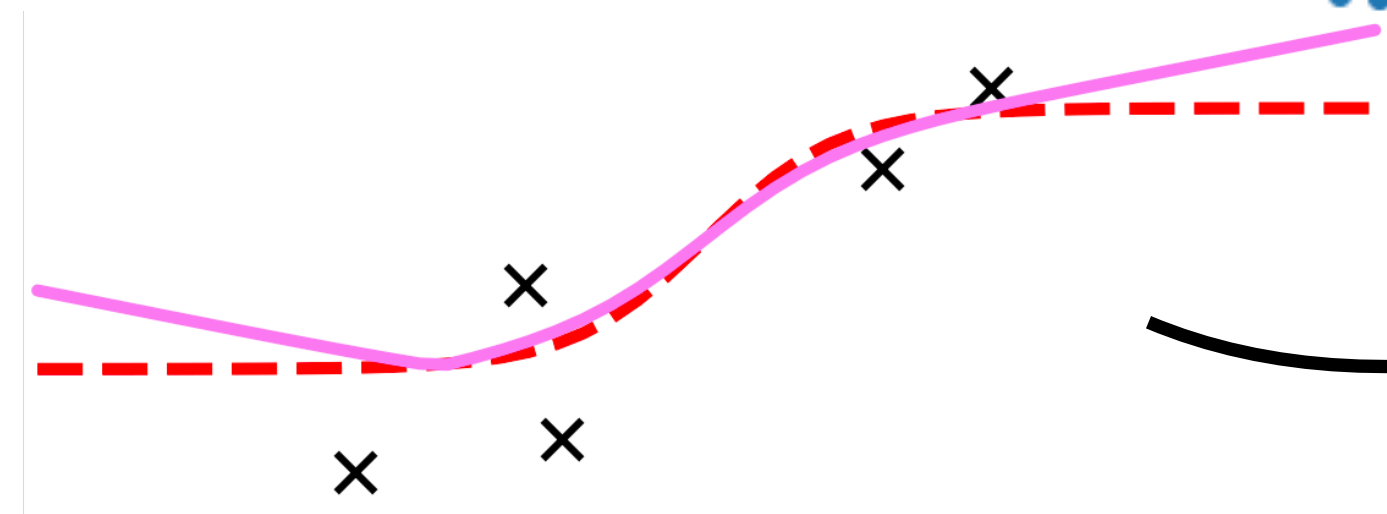
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Ground Truth

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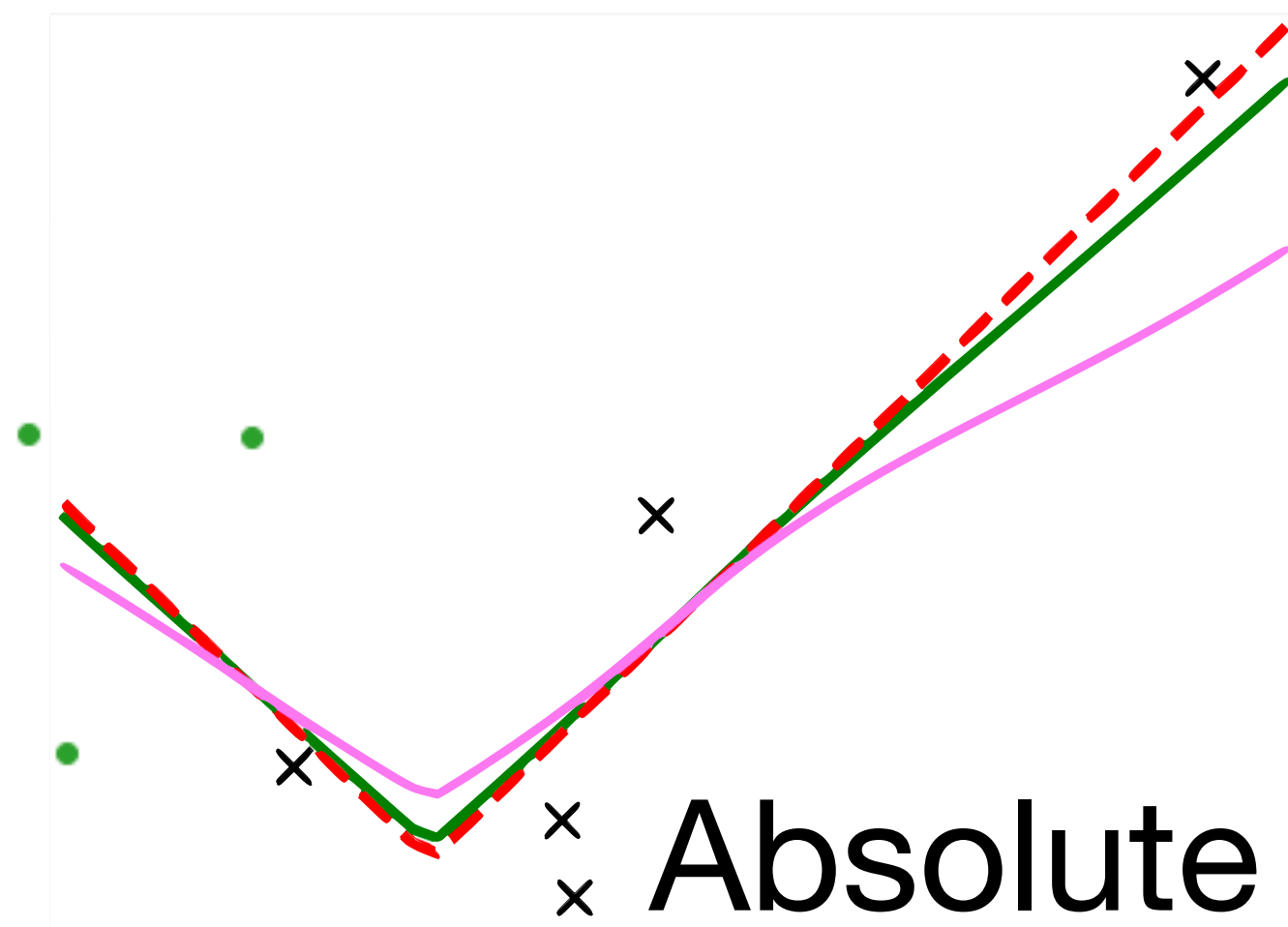
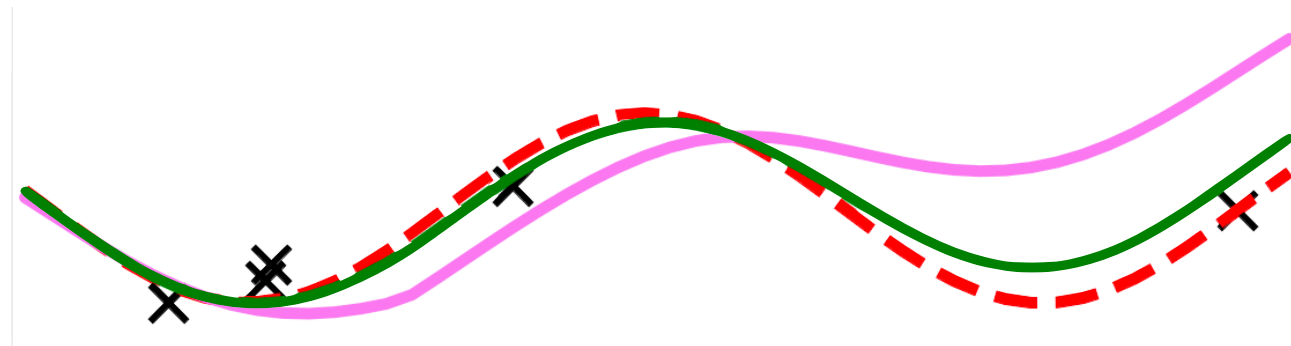
MAML (1-mode)

Tanh





Sinusoid



Absolute  
Value

$\theta_1$

$\theta_2$

$\theta_3$

x

Data Sample

Ground Truth

Ground Truth

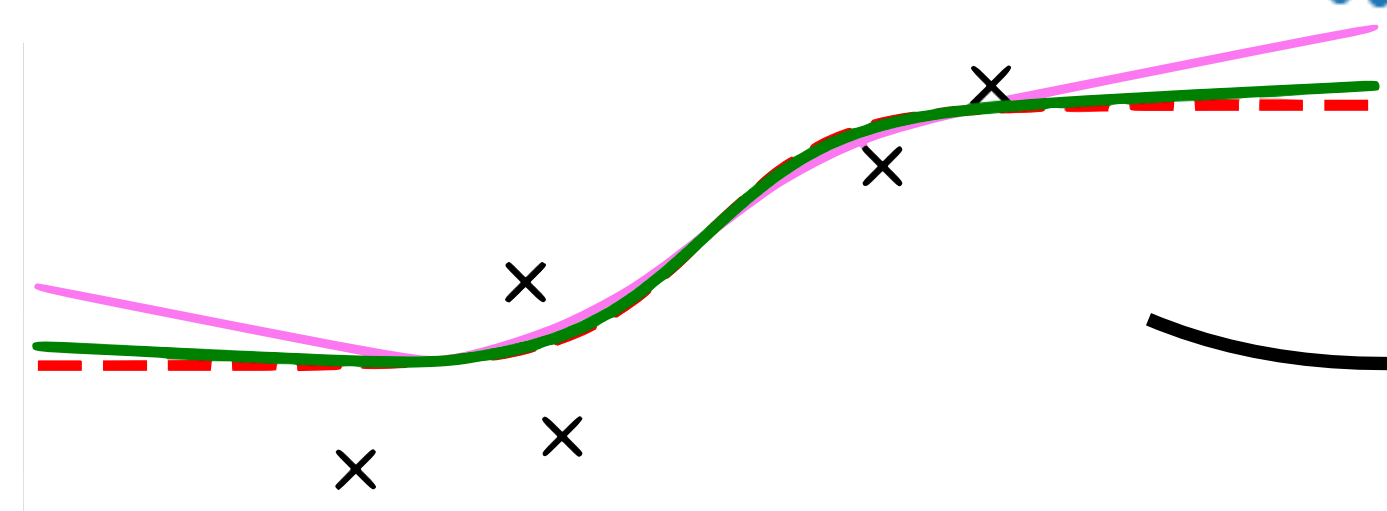
MAML (1-mode)

MAML (1-mode)

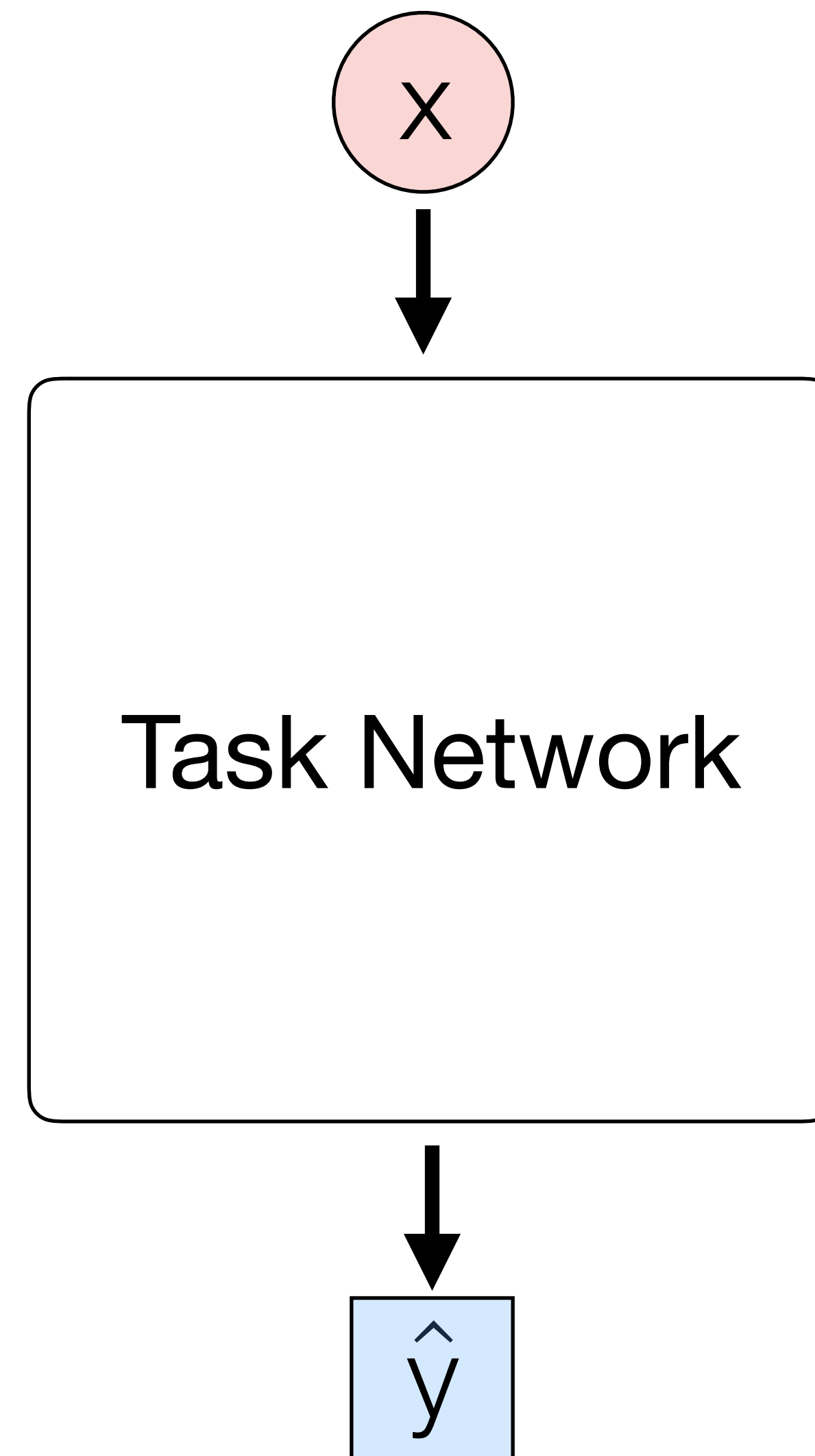
MAML (3-mode)

MAML (3-mode)

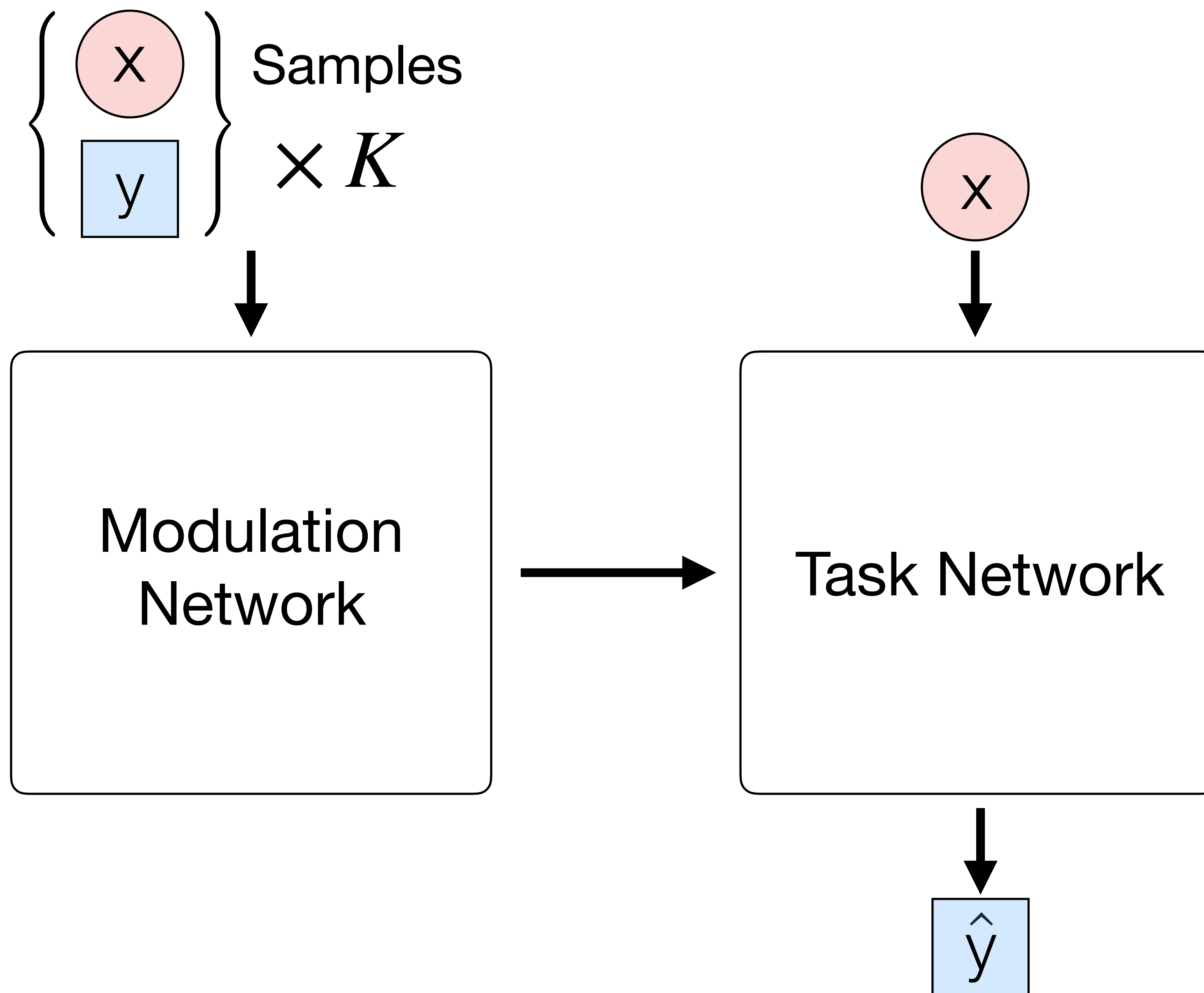
Tanh





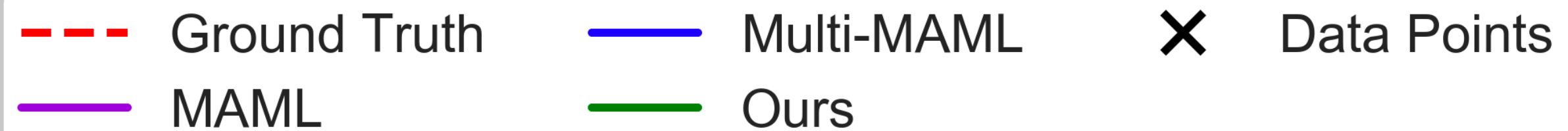
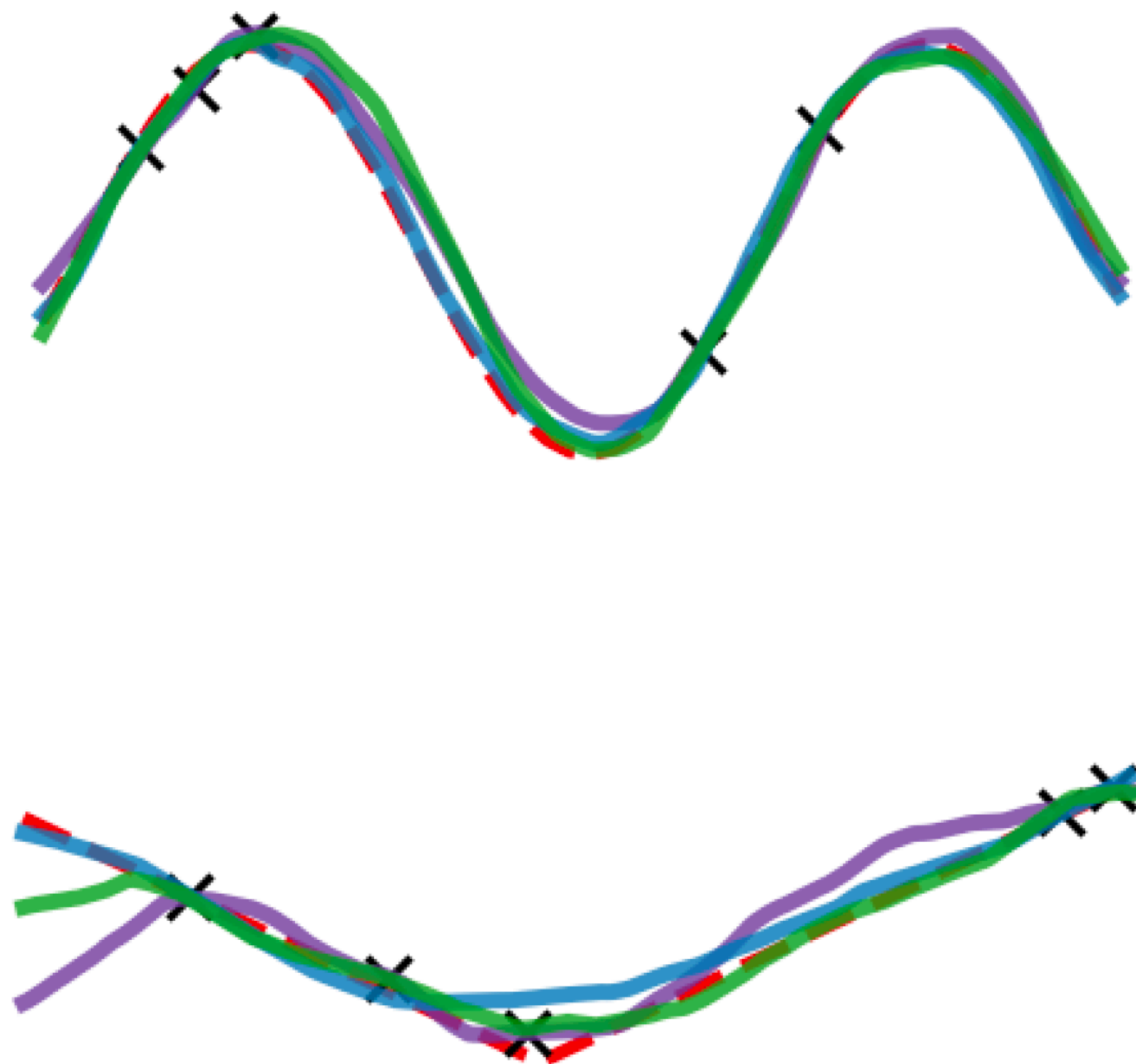






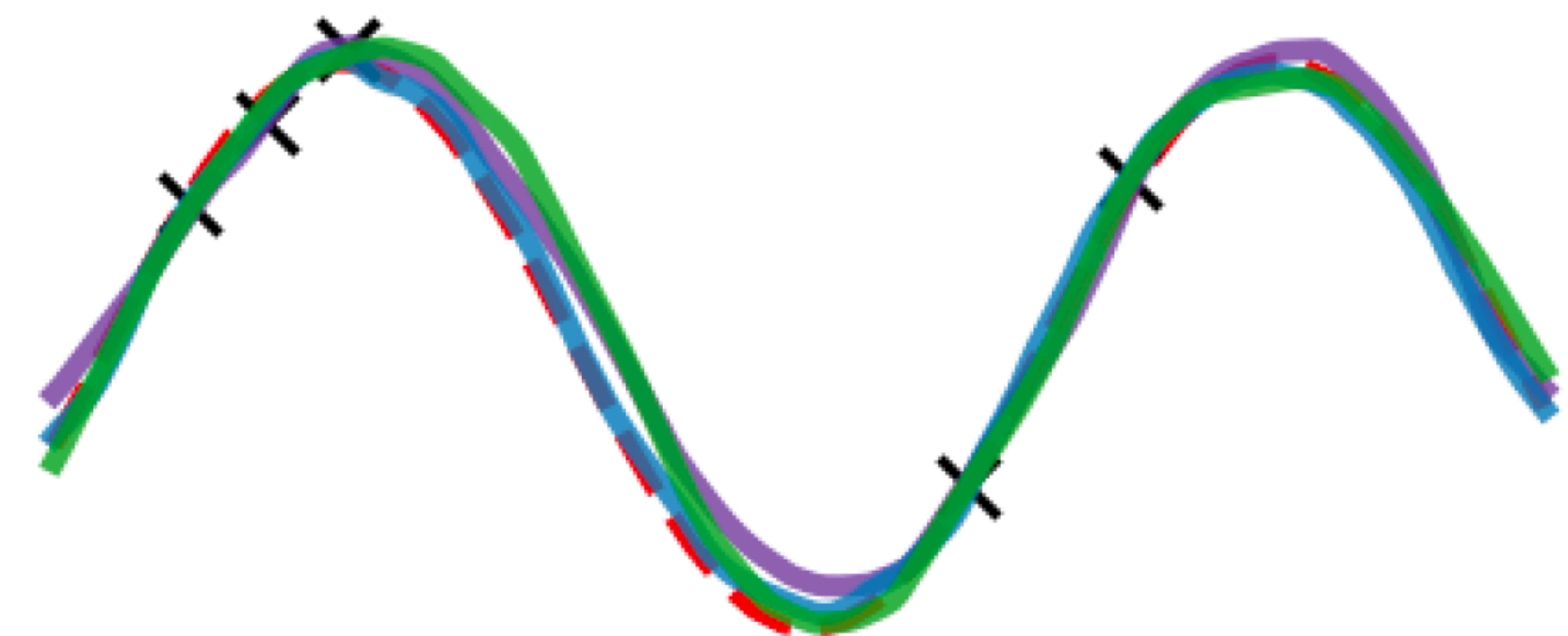


# Evaluations: Regression





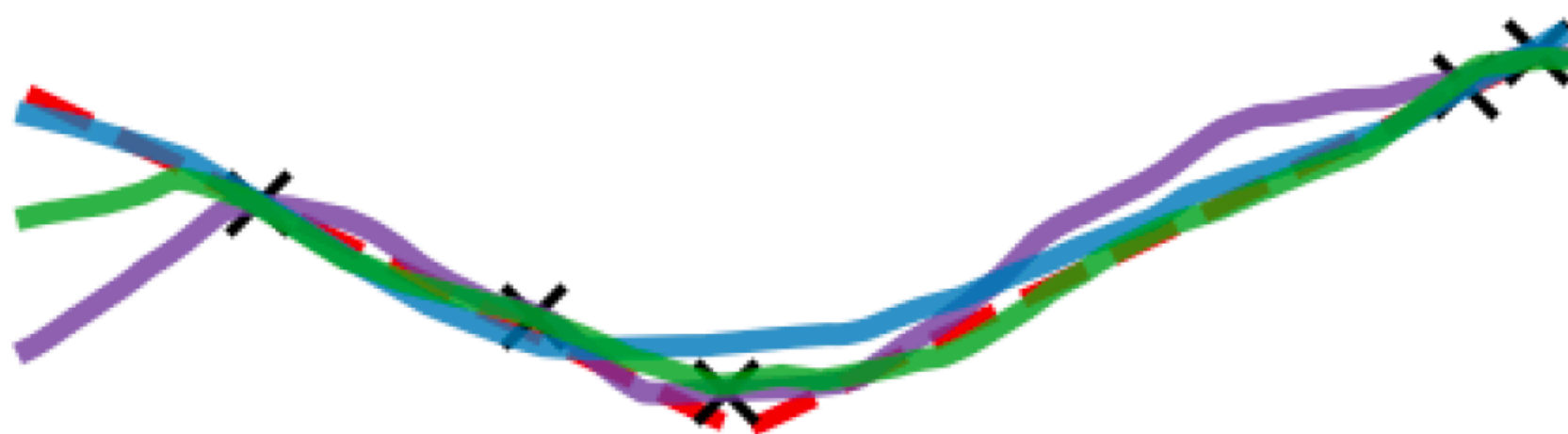
# Evaluations: Regression



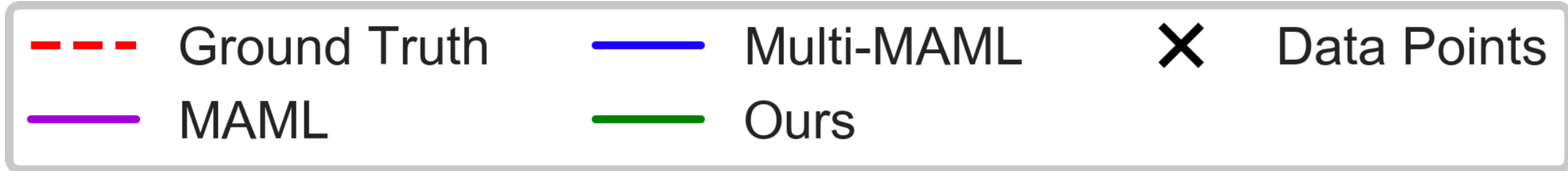
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|      |       |
|------|-------|
| MAML | 1.668 |
| Ours | 0.868 |

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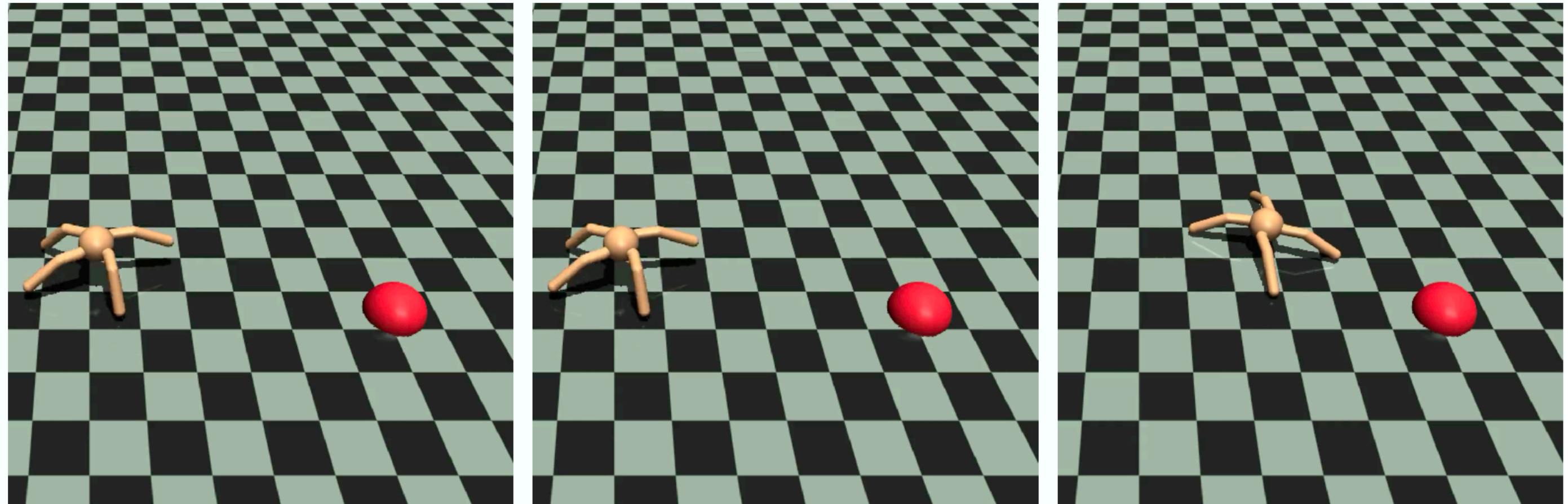
5-Mode Regression  
MSE



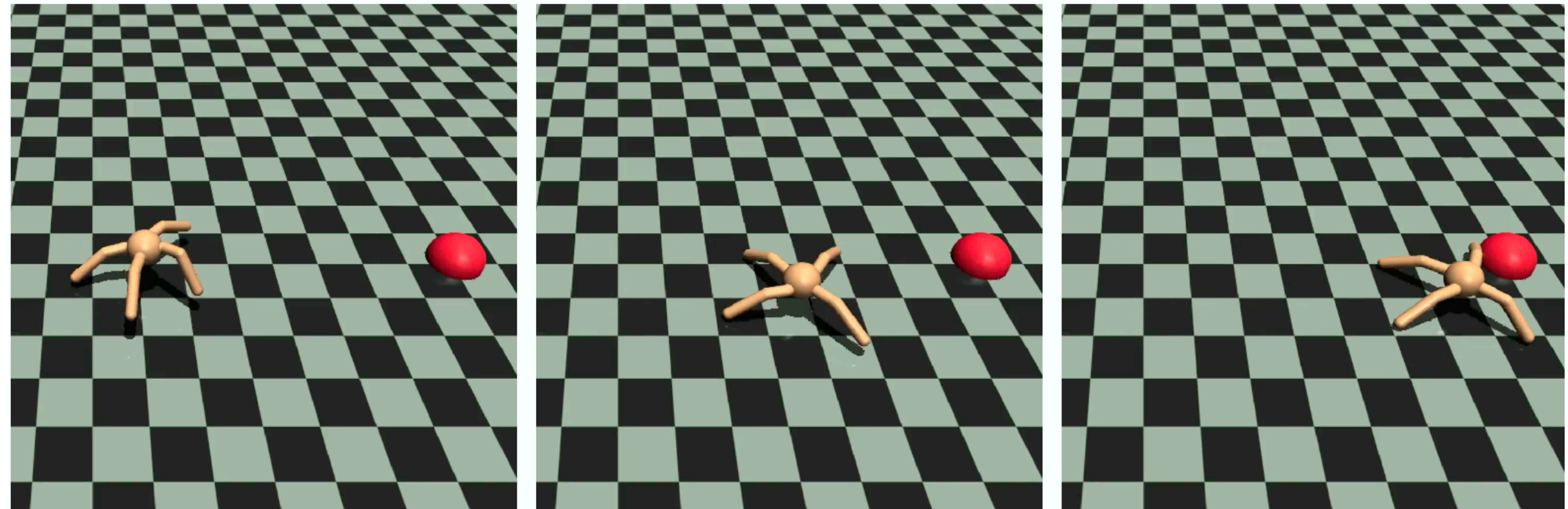


# Evaluations: Reinforcement Learning

ProMP

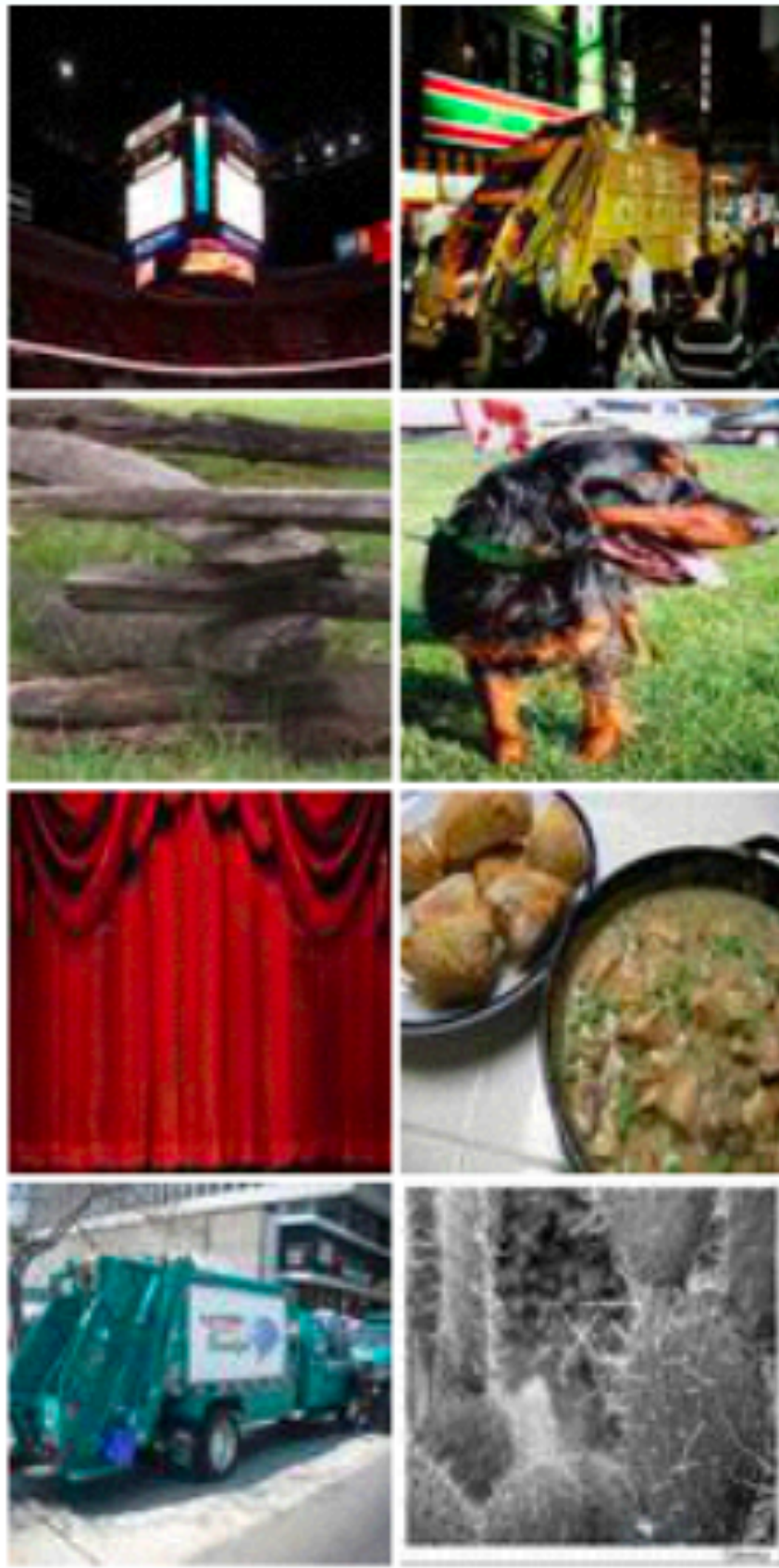


Ours





# Evaluations: Classification

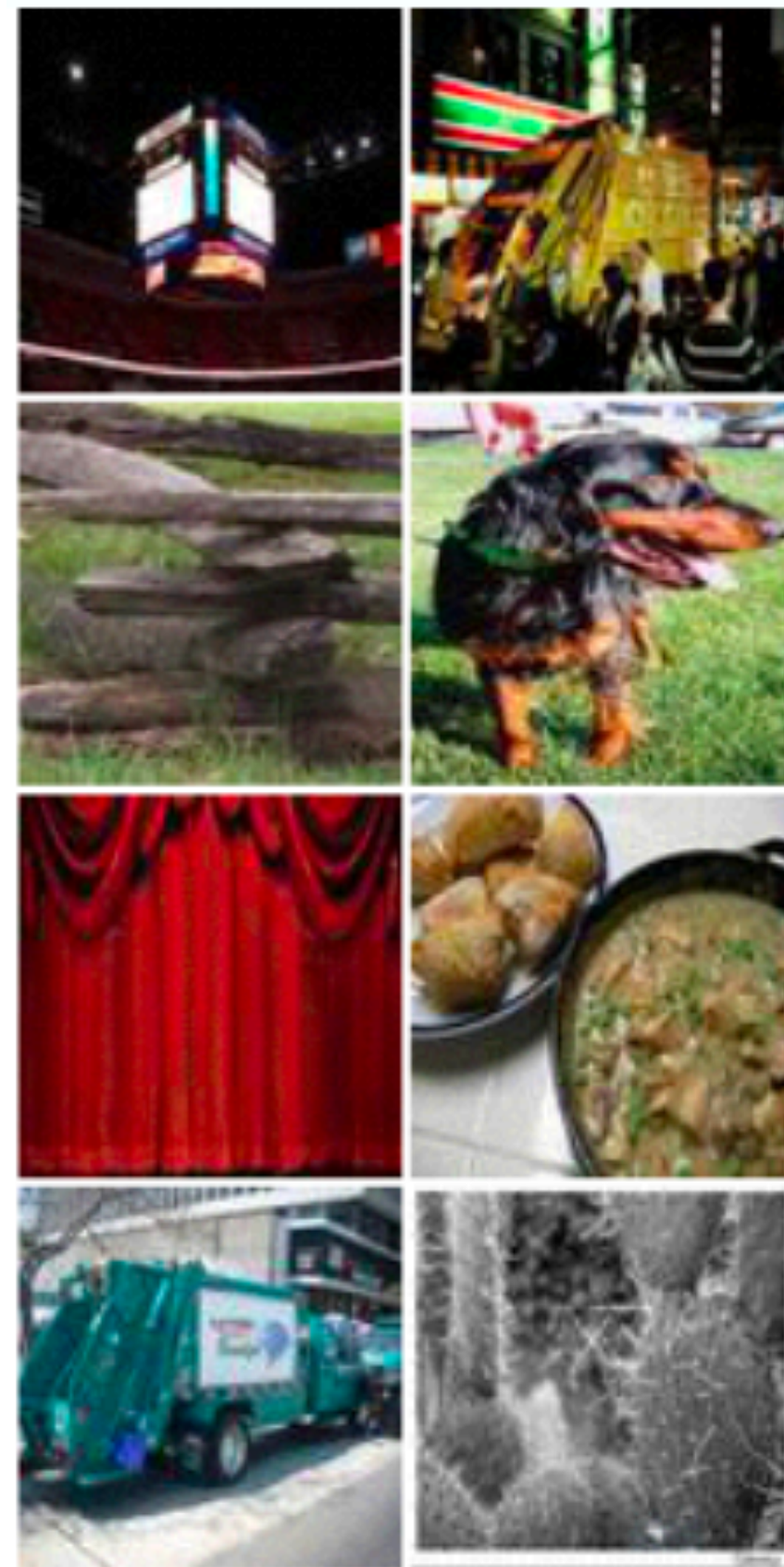


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## Evaluations: Classification



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|      |        |
|------|--------|
| MAML | 54.41% |
| Ours | 60.83% |

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5-Way, 5-Shot 5-Mode  
Classification