



MOTIVATION



• Meta-testing: adapt \mathcal{P}_{θ} to solve prediction tasks on $\mathcal{D}_{\text{meta-test}}$ of *novel* action classes



FEW-SHOT HUMAN MOTION PREDICTION VIA META-LEARNING

Yu-Xiong Wang Liang-Yan Gui

Email: {lgui, yuxiongw, deva, moura}@andrew.cmu.edu



- Meta-objective: maximal performance on S_{test} of task \mathcal{T}_i

$$\min_{\theta} \sum_{\mathcal{T}_{i}} \mathcal{L}_{\mathcal{T}_{i}} \left(\mathcal{P}_{\theta_{i}'} \right) = \min_{\theta} \sum_{\mathcal{T}_{i}} \mathcal{L}_{\mathcal{T}_{i}} \left(\mathcal{P}_{\theta - \alpha \nabla_{\theta} \mathcal{L}_{\mathcal{T}_{i}} (\mathcal{P}_{\theta})} \right)$$

- to many-shot model parameters

- Integrated meta-objective during meta-training

$$\min_{\theta,\phi} \sum_{\mathcal{T}_i} \widetilde{\mathcal{L}}_{\mathcal{T}_i} \left(\mathcal{P}_{\theta'_i} \right) = \min_{\theta,\phi} Z_i$$

D_{meta}-trair







Deva Ramanan José M. F. Moura

ECCV 2018 European Conference on Computer Vision