Data evaluation - Baselines and MAML

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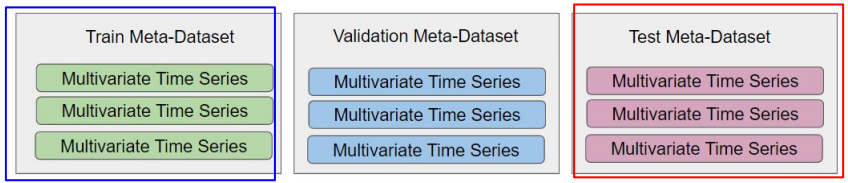
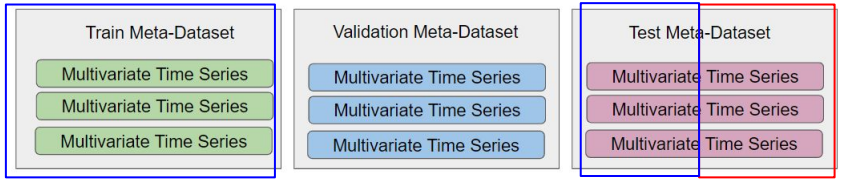
Evaluation types

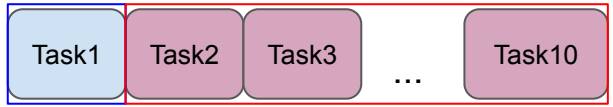
- Without fine-tuning (WOFT)



- On 50% (50-50)



- With fine-tuning (WFT)

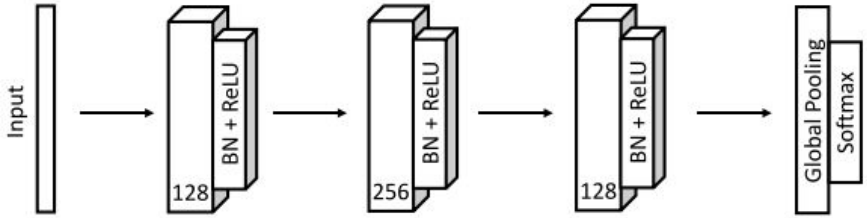


To do (Last week)

- Finish baselines
- Start MAML

Base models

- FCN: Kernels [8,5,3] ⇨ 145.665 parameters



- LSTM: 2 layers, 120 Hidden Dimension ⇨ 181.081 parameters

Results (1)

	WOFT						
	XGBOOST	**GP**	**RESNET**	**VRADA-S**	**VRADA-C**	**LSTM**	**FCN**
POLLUTION	0.043028	-	0.048795	0.043168	0.042705	**0.041901**	0.042661
HR	0.076297	-	0.072631	0.084135	0.081985	0.079914	**0.068044**
BATTERY	0.002594	-	0.002965	0.003056	0.003013	0.002264	**0.002130**

Results (2)

	50-50								
	XGBOOST	**GP**	**RESNET**	**VRADA-S**	**VRADA-C**	**LSTM**	**FCN**	**LSTM-NOFT**	**FCN-NOFT**
POLLUTION	0.0463201	-	0.051086	0.046929	0.048151	**0.042781**	0.047716	0.046712	0.049720
HR	0.0600014	-	0.059105	0.059760	0.060270	0.065187	**0.055098**	0.057080	0.058845
BATTERY	0.0038910	-	0.004414	0.005359	0.005252	**0.003602**	0.249746	0.004309	0.003727

Results (3)

	WFT								
	XGBOOST	**GP**	**RESNET**	**VRADA-S**	**VRADA-C**	**LSTM**	**FCN**	**LSTM-NOFT**	**FCN-NOFT**
POLLUTION	-	0.049127	0.050516	0.042286	0.041919	**0.040666**	0.051758	0.041002	0.043896
HR	-	0.118233	0.076403	0.082425	0.080642	0.078851	0.115783	0.079011	**0.064072**
BATTERY	-	0.203649	0.003109	0.003229	0.003146	**0.001645**	0.010029	0.002644	0.001887

Meta-learning libraries

- Learn2learn: http://learn2learn.net/ (947 stars)
- Higher: https://github.com/facebookresearch/higher (890)
- Torchmeta: https://github.com/tristandeleu/pytorch-meta (990)

To do (Next week)

- FCN fine-tuning.
- MAML hyperparameter tuning.
- Compare the *learn2learn* with *higher.*

Timeline

Time	Tasks
August	Literature review, data exploration
September	Baselines implementation
October	Proposed model implementation
November	Experiments on models (Hyper. Tun., etc.)
December	Results evaluation and adjustments
January	Results report and thesis finalization