MetaNLP 2021

The 1st Workshop on Meta Learning and Its Applications to Natural Language Processing

Proceedings of the Workshop

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Welcome to the ACL 2021 Workshop on **Meta Learning and Its Applications to Natural Language Processing (MetaNLP)**.

Deep learning based natural language processing (NLP) has become the mainstream of research in recent years and significantly outperforms conventional methods. However, deep learning models are notorious for being data and computation hungry. These downsides limit such models' application from deployment to different domains, languages, countries, or styles, since collecting in-genre data and model training from scratch are costly. The long-tail nature of human language makes challenges even more significant.

Meta-learning, or 'Learning to Learn', aims to learn better learning algorithms, including better parameter initialization, optimization strategy, network architecture, distance metrics, and beyond. Meta-learning has been shown to allow faster fine-tuning, converge to better performance, and achieve outstanding results for few-shot learning in many applications. Meta-learning is one of the most important new techniques in machine learning in recent years, but the method is mainly investigated with applications in computer vision. It is believed that meta-learning has excellent potential to be applied in NLP, and some works have been proposed with notable achievements in several relevant problems, e.g., relation extraction, machine translation, and dialogue generation and state tracking. However, it does not catch the same level of attention as in the image processing community.

The goal of this workshop is to bring concentrated discussions on meta-learning for the field of NLP via several invited talks, oral and poster sessions with high-quality papers, and a panel of leading researchers from industry and academia. Alongside research work on new meta-learning methods, data, applications, and results, this workshop will call for novel work on understanding, analyzing, and comparing different meta-learning approaches for NLP.

We hope you will enjoy MetaNLP 2021 at ACL and contribute to the future success of our community!

MetaNLP 2021 Organizers: Hung-Yi Lee, Mitra Mohtarami, Shang-Wen Li, Di Jin, Mandy Korpusik, Shuyan Dong, Ngoc Thang Vu, Dilek Hakkani-Tur

Organizers:

Hung-Yi Lee, National Taiwan University

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Invited Speaker:

Andreas Vlachos, University of Cambridge

Chelsea Finn, StanfordUniversity

Eric Xing, Carnegie Mellon University

Heng Ji, University of Illinois Urbana-Champaign

Zhou Yu, Columbia University

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Andreas Vlachos

11:00–12:00 Oral Presentations

Don't Miss the Labels: Label-semantic Augmented Meta-Learner for Few-Shot Text Classification (ACL findings)
Qiaoyang Luo

Learning to Bridge Metric Spaces: Few-shot Joint Learning of Intent Detection and Slot Filling (ACL findings)
Yutai Ho

Meta-Reinforcement Learning for Mastering Multiple Skills and Generalizing across Environments in Text-based Games
Zhenjie Zhao, Mingfei Sun and Xiaojuan Ma

12:00–13:00 Oral Presentations

Few-Shot Event Detection with Prototypical Amortized Conditional Random Field (ACL findings)
Xin Cong

Meta-Learning for Improving Rare Word Recognition in end-to-end ASR (ICASSP 2021 cross submission)
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Minimax and Neyman–Pearson Meta-Learning for Outlier Languages (ACL findings)
Edoardo Maria Ponti

Thursday, August 05, 2021 [UTC+0] (continued)

13:00–13:15 Break

13:15–14:00 *Invited talk: Meta-Learning for Dialog Systems*
Yu Zhou

14:00–14:45 *Invited talk: TBA*
Eric Xing

14:45–15:00 Break

15:00–16:00 Oral Presentations

Soft Layer Selection with Meta-Learning for Zero-Shot Cross-Lingual Transfer
Weijia Xu, Batool Haider, Jason Krone and Saab Mansour

Zero-Shot Compositional Concept Learning
GUANGYUE XU, Parisa Kordjamshidi and Joyce Chai

Few Shot Dialogue State Tracking using Meta-learning (EACL 2021 cross submission)
Saket Dingliwal, Shuyang Gao, Sanchit Agarwal, Chien-Wei Lin, Tagyoung Chung and Dilek Hakkani-Tur

16:00–17:00 Poster Session

Meta-learning for Task-oriented Household Text Games (extended abstract)
Zhenjie Zhao and Xiaojuan Ma

Multi-Pair Text Style Transfer for Unbalanced Data via Task-Adaptive Meta-Learning
Xing Han and Jessica Lundin

Patching Errors in Pre-trained Language Models (extended abstract)
Eric Mitchell, Spencer Braun, Charles Lin, Chelsea Finn and Christopher Manning

On the cross-lingual transferability of multilingual prototypical models across NLU tasks
Oralie Cattan, Sophie Rosset and Christophe Servan

Thursday, August 05, 2021 [UTC+0] (continued)

Meta-Learning for Few-Shot Named Entity Recognition
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Multi-accent Speech Separation with One Shot Learning
Kuan Po Huang, Yuan-Kuei Wu and Hung-yi Lee

Semi-supervised Meta-learning for Cross-domain Few-shot Intent Classification
Yue Li and Jiong Zhang

Meta-learning for Classifying Previously Unseen Data Source into Previously Unseen Emotional Categories
Gaël Guibon, Matthieu Labeau, Hélène Flamein, Luce Lefeuvre and Chloé Clavel

Meta-learning for downstream aware and agnostic pretraining (extended abstract)
Hongyin Luo, Shuyan Dong, Yung-Sung Chuang and Shang-Wen Li

17:00–17:15 Break

17:15–18:00 *Invited talk: Few-Shot Learning to Give Feedback in the Real World*
Chelsea Finn

18:00–18:45 *Invited talk: Learning from Annotation Guideline: A Case Study on Event Extraction*
Heng Ji

18:45–19:00 Closing Remarks