SemEval 2021

The 15th International Workshop on Semantic Evaluation (SemEval-2021)

Proceedings of the Workshop

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Bangkok, Thailand (online)

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Introduction

Welcome to SemEval-2021!

The Semantic Evaluation (SemEval) series of workshops focuses on the evaluation and comparison of systems that can analyze diverse semantic phenomena in text, with the aims of extending the current state of the art in semantic analysis and creating high quality annotated datasets in a range of increasingly challenging problems in natural language semantics. SemEval provides an exciting forum for researchers to propose challenging research problems in semantics and to build systems/techniques to address such research problems.

SemEval-2021 is the fifteenth workshop in the series of International Workshops on Semantic Evaluation. The first three workshops, SensEval-1 (1998), SensEval-2 (2001), and SensEval-3 (2004), focused on word sense disambiguation, each time expanding in the number of languages offered, the number of tasks, and also the number of teams participating. In 2007, the workshop was renamed to SemEval, and the subsequent SemEval workshops evolved to include semantic analysis tasks beyond word sense disambiguation. In 2012, SemEval became a yearly event. It currently takes place every year, on a two-year cycle. The tasks for SemEval-2021 were proposed in 2020, and next year's tasks have already been selected and are underway.

SemEval-2021 is co-located (virtually) with The Joint Conference of the 59th Annual Meeting of the Association for Computational Linguistics and the 11th International Joint Conference on Natural Language Processing (ACL-IJCNLP 2021) on August 5–6. This year's SemEval included the following 11 tasks:

- Lexical semantics
  - Task 1: Lexical Complexity Prediction
  - Task 2: Multilingual and Cross-lingual Word-in-Context Disambiguation
  - Task 4: Reading Comprehension of Abstract Meaning
- Social factors & opinion
  - Task 5: Toxic Spans Detection
  - Task 6: Detection of Persuasive Techniques in Texts and Images
  - Task 7: HaHackathon: Detecting and Rating Humor and Offense
- Information in scientific & clinical text
  - Task 8: MeasEval: Counts and Measurements
  - Task 9: Statement Verification and Evidence Finding with Tables
  - Task 10: Source-Free Domain Adaptation for Semantic Processing
  - Task 11: NLPContributionGraph
- Other phenomena
  - Task 12: Learning with Disagreements

This volume contains both task description papers that describe each of the above tasks and system description papers that present the systems that participated in the tasks. A total of 11 task description papers and 175 system description papers are included in this volume.

SemEval-2021 features two awards, one for organizers of a task and one for a team participating in a task. The Best Task award recognizes a task that stands out for making an important intellectual contribution to empirical computational semantics, as demonstrated by a creative, interesting, and scientifically rigorous dataset and evaluation design, and a well-written task overview paper. The Best Paper award recognizes a system description paper (written by a team participating in one of the tasks) that advances our understanding of a problem and available solutions with respect to a task. It need not be the highest-scoring system in the task, but it must have a strong analysis component in the evaluation, as well as a clear and reproducible description of the problem, algorithms, and methodology.

2021 has been another particularly challenging year across the globe. We are immensely grateful to the task organizers for their perseverance through many ups, downs, and uncertainties, as well as to the large number of participants whose enthusiastic participation has made SemEval once again a successful event! Thanks also to the task organizers who served as area chairs for their tasks, and to both task organizers and participants who reviewed paper submissions. These proceedings have greatly benefited from their detailed and thoughtful feedback. Thousands of thanks to our assistant organizers Julia R. Bonn and Abhidip Bhattacharyya for their extensive, detailed, and dedicated work on the production of these proceedings! We also thank the members of the program committee who reviewed the submitted task proposals and helped us to select this exciting set of tasks, and we thank the ACL 2021 conference organizers for their support. Finally, we most gratefully acknowledge the support of our sponsor: the ACL Special Interest Group on the Lexicon (SIGLEX).

The SemEval-2021 organizers: Guy Emerson, Aurelie Herbelot, Alexis Palmer, Natalie Schluter, Nathan Schneider, and Xiaodan Zhu

Organizing Committee

SemEval Organizers:

Alexis Palmer, University of Colorado Boulder
Nathan Schneider, Georgetown University
Natalie Schluter, IT University of Copenhagen & Google Brain
Guy Emerson, University of Cambridge
Xiaodan Zhu, Queen's University
Aurelie Herbelot, University of Trento

Assistant Organizers:

Julia R. Bonn, University of Colorado Boulder
Abhidip Bhattacharyya, University of Colorado Boulder

Task Selection Committee:

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Task Organizers:

Task 1: Matthew Shardlow, Richard Evans, Gustavo Henrique Paetzold, Marcos Zampieri
Task 2: Federico Martelli, Najla Kalach, Gabriele Tola, Roberto Navigli
Task 4: Boyuan Zheng, Xiaoyu Yang, Yu-Ping Ruan, Quan Liu, Zhen-Hua Ling, Si Wei, Xiaodan Zhu
Task 5: John Pavlopoulos, Ion Androutsopoulos, Jeffrey Sorensen, Léo Laugier
Task 6: Giovanni Da San Martino, Hamed Firooz, Preslav Nakov, Fabrizio Silvestri
Task 7: J. A. Meaney, Steven Wilson, Walid Magdy, Luis Chiruzzo
Task 8: Corey Harper, Jessica Cox, Ron Daniel, Paul Groth, Curt Kohler, Antony Scerri
Task 9: Nancy Xin Ru Wang, Sara Rosenthal, Marina Danilevsky, Diwakar Mahajan
Task 10: Steven Bethard, Egoitz Laparra, Timothy Miller, Özlem Uzuner
Task 11: Jennifer D'Souza, Sören Auer, Ted Pedersen
Task 12: Alexandra Uma, Tommaso Fornaciari, Tristan Miller, Barbara Plank, Edwin Simpson, Massimo Poesio

Invited Speakers:

Diyi Yang, Georgia Institute of Technology (shared speaker with *SEM)
Hannah Rohde, University of Edinburgh

Table of Contents

Conference Program

All times are UTC.

5 August 2021

14:00–15:00 **Invited Talk**
Seven Social Factors in Natural Language Processing: Theory and Practice
Diyi Yang

15:00–15:25 **Plenary session: Tasks 1, 2, 4**

SemEval-2021 Task 1: Lexical Complexity Prediction
Matthew Shardlow, Richard Evans, Gustavo Henrique Paetzold and Marcos Zampieri

OCHADAI-KYOTO at SemEval-2021 Task 1: Enhancing Model Generalization and Robustness for Lexical Complexity Prediction
Yuki Taya, Lis Kanashiro Pereira, Fei Cheng and Ichiro Kobayashi

SemEval-2021 Task 2: Multilingual and Cross-lingual Word-in-Context Disambiguation (MCL-WiC)
Federico Martelli, Najla Kalach, Gabriele Tola and Roberto Navigli

SemEval-2021 Task 4: Reading Comprehension of Abstract Meaning
Boyuan Zheng, Xiaoyu Yang, Yu-Ping Ruan, Zhenhua Ling, Quan Liu, Si Wei and Xiaodan Zhu

TA-MAMC at SemEval-2021 Task 4: Task-adaptive Pretraining and Multi-head Attention for Abstract Meaning Reading Comprehension
Jing Zhang, Yimeng Zhuang and Yinpei Su

5 August 2021 (continued)

15:25–15:50 Plenary session: Tasks 5, 6, 7

SemEval-2021 Task 5: Toxic Spans Detection
John Pavlopoulos, Jeffrey Sorensen, Léo Laugier and Ion Androutsopoulos

SemEval-2021 Task 6: Detection of Persuasion Techniques in Texts and Images
Dimitar Dimitrov, Bishr Bin Ali, Shaden Shaar, Firoj Alam, Fabrizio Silvestri, Hamed Firooz, Preslav Nakov and Giovanni Da San Martino

Alpha at SemEval-2021 Task 6: Transformer Based Propaganda Classification
Zhida Feng, Jiji Tang, Jiaxiang Liu, Weichong Yin, Shikun Feng, Yu Sun and Li Chen

SemEval 2021 Task 7: HaHackathon, Detecting and Rating Humor and Offense
J. A. Meaney, Steven Wilson, Luis Chiruzzo, Adam Lopez and Walid Magdy

15:50–16:00 Announcement of Best Paper Awards & General Discussion

16:30–17:30 Poster session: Tasks 1, 2, 4

+ ***This poster session will also be held at 02:00–03:00 and at 11:30–12:30.***

LangResearchLab NC at SemEval-2021 Task 1: Linguistic Feature Based Modelling for Lexical Complexity
Raksha Agarwal and Niladri Chatterjee

Complex words identification using word-level features for SemEval-2020 Task 1
Jenny A. Ortiz-Zambrano and Arturo Montejo-Ráez

TUDA-CCL at SemEval-2021 Task 1: Using Gradient-boosted Regression Tree Ensembles Trained on a Heterogeneous Feature Set for Predicting Lexical Complexity
Sebastian Gombert and Sabine Bartsch

JCT at SemEval-2021 Task 1: Context-aware Representation for Lexical Complexity Prediction
Chaya Liebeskind, Otniel Elkayam and Shmuel Liebeskind

5 August 2021 (continued)

IAPUCP at SemEval-2021 Task 1: Stacking Fine-Tuned Transformers is Almost All You Need for Lexical Complexity Prediction
Kervy Rivas Rojas and Fernando Alva-Manchego

Uppsala NLP at SemEval-2021 Task 2: Multilingual Language Models for Fine-tuning and Feature Extraction in Word-in-Context Disambiguation
Huiling You, Xingran Zhu and Sara Stymne

SkoltechNLP at SemEval-2021 Task 2: Generating Cross-Lingual Training Data for the Word-in-Context Task
Anton Razzhigaev, Nikolay Arefyev and Alexander Panchenko

Zhestyatsky at SemEval-2021 Task 2: ReLU over Cosine Similarity for BERT Fine-tuning
Boris Zhestiankin and Maria Ponomareva

SzegedAI at SemEval-2021 Task 2: Zero-shot Approach for Multilingual and Cross-lingual Word-in-Context Disambiguation
Gábor Berend

ReCAM@IITK at SemEval-2021 Task 4: BERT and ALBERT based Ensemble for Abstract Word Prediction
Abhishek Mittal and Ashutosh Modi

ECNU_ICA_1 SemEval-2021 Task 4: Leveraging Knowledge-enhanced Graph Attention Networks for Reading Comprehension of Abstract Meaning
Pingsheng Liu, Linlin Wang, Qian Zhao, Hao Chen, Yuxi Feng, Xin Lin and liang he

LRG at SemEval-2021 Task 4: Improving Reading Comprehension with Abstract Words using Augmentation, Linguistic Features and Voting
Abheesht Sharma, Harshit Pandey, Gunjan Chhablani, Yash Bhartia and Tirtharaj Dash

IIE-NLP-Eyas at SemEval-2021 Task 4: Enhancing PLM for ReCAM with Special Tokens, Re-Ranking, Siamese Encoders and Back Translation
Yuqiang Xie, Luxi Xing, Wei Peng and Yue Hu

NLP-IIS@UT at SemEval-2021 Task 4: Machine Reading Comprehension using the Long Document Transformer
Hossein Basafa, Sajad Movahedi, Ali Ebrahimi, Azadeh Shakery and Heshaam Faili

5 August 2021 (continued)

17:30–18:30 Poster session: Tasks 5, 6, 7

+ ***This poster session will also be held at 03:00–04:00 and at 12:30–13:30.***

IITK@Detox at SemEval-2021 Task 5: Semi-Supervised Learning and Dice Loss for Toxic Spans Detection
Archit Bansal, Abhay Kaushik and Ashutosh Modi

UniParma at SemEval-2021 Task 5: Toxic Spans Detection Using CharacterBERT and Bag-of-Words Model
Akbar Karimi, Leonardo Rossi and Andrea Prati

UPB at SemEval-2021 Task 5: Virtual Adversarial Training for Toxic Spans Detection
Andrei Paraschiv, Dumitru-Clementin Cercel and Mihai Dascalu

NLRG at SemEval-2021 Task 5: Toxic Spans Detection Leveraging BERT-based Token Classification and Span Prediction Techniques
Gunjan Chhablani, Abheesht Sharma, Harshit Pandey, Yash Bhartia and Shan Suthaharan

UoB at SemEval-2021 Task 5: Extending Pre-Trained Language Models to Include Task and Domain-Specific Information for Toxic Span Prediction
Erik Yan and Harish Tayyar Madabushi

Cisco at SemEval-2021 Task 5: What's Toxic?: Leveraging Transformers for Multiple Toxic Span Extraction from Online Comments
Sreyan Ghosh and Sonal Kumar

MedAI at SemEval-2021 Task 5: Start-to-end Tagging Framework for Toxic Spans Detection
Zhen Wang, Hongjie Fan and Junfei Liu

HamiltonDinggg at SemEval-2021 Task 5: Investigating Toxic Span Detection using RoBERTa Pre-training
Huiyang Ding and David Jurgens

WVOQ at SemEval-2021 Task 6: BART for Span Detection and Classification
Cees Roele

HumorHunter at SemEval-2021 Task 7: Humor and Offense Recognition with Disentangled Attention
Yubo Xie, Junze Li and Pearl Pu

5 August 2021 (continued)

Grenzlinie at SemEval-2021 Task 7: Detecting and Rating Humor and Offense
Renyuan Liu and Xiaobing Zhou

abcbpc at SemEval-2021 Task 7: ERNIE-based Multi-task Model for Detecting and Rating Humor and Offense
Chao Pang, Xiaoran Fan, Weiyue Su, Xuyi Chen, Shuohuan Wang, Jiaxiang Liu, Xuan Ouyang, Shikun Feng and Yu Sun

Humor@IITK at SemEval-2021 Task 7: Large Language Models for Quantifying Humor and Offensiveness
Aishwarya Gupta, Avik Pal, Bholeshwar Khurana, Lakshay Tyagi and Ashutosh Modi

RoMa at SemEval-2021 Task 7: A Transformer-based Approach for Detecting and Rating Humor and Offense
Roberto Labadie, Mariano Jason Rodriguez, Reynier Ortega and Paolo Rosso

6 August 2021

14:00–15:00 **Invited Talk**
Predictability and Informativity in Communication
Hannah Rohde

15:00–15:25 **Plenary session: Tasks 8, 9, 12**

SemEval-2021 Task 8: MeasEval – Extracting Counts and Measurements and their Related Contexts
Corey Harper, Jessica Cox, Curt Kohler, Antony Scerri, Ron Daniel Jr. and Paul Groth

SemEval-2021 Task 9: Fact Verification and Evidence Finding for Tabular Data in Scientific Documents (SEM-TAB-FACTS)
Nancy X. R. Wang, Diwakar Mahajan, Marina Danilevsky and Sara Rosenthal

BreakingBERT@IITK at SemEval-2021 Task 9: Statement Verification and Evidence Finding with Tables
Aditya Jindal, Ankur Gupta, Jaya Srivastava, Preeti Menghwani, Vijit Malik, Vishesh Kaushik and Ashutosh Modi

SemEval-2021 Task 12: Learning with Disagreements
Alexandra Uma, Tommaso Fornaciari, Anca Dumitrache, Tristan Miller, Jon Chamberlain, Barbara Plank, Edwin Simpson and Massimo Poesio

6 August 2021 (continued)

15:25–15:50 Plenary session: Tasks 10, 11

SemEval-2021 Task 10: Source-Free Domain Adaptation for Semantic Processing
Egoitz Laparra, Xin Su, Yiyun Zhao, Özlem Uzuner, Timothy Miller and Steven Bethard

BLCUFIGHT at SemEval-2021 Task 10: Novel Unsupervised Frameworks For Source-Free Domain Adaptation
Weikang Wang, Yi Wu, Yixiang Liu and Pengyuan Liu

SemEval-2021 Task 11: NLPContributionGraph - Structuring Scholarly NLP Contributions for a Research Knowledge Graph
Jennifer D'Souza, Sören Auer and Ted Pedersen

UIUC_BioNLP at SemEval-2021 Task 11: A Cascade of Neural Models for Structuring Scholarly NLP Contributions
Haoyang Liu, M. Janina Sarol and Halil Kilicoglu

15:50–16:00 Announcement of SemEval-2022 Tasks & Closing Remarks

16:30–17:30 Poster session: Tasks 8, 9, 12

+ ***This poster session will also be held at 02:00–03:00 and at 11:30–12:30.***

KGP at SemEval-2021 Task 8: Leveraging Multi-Staged Language Models for Extracting Measurements, their Attributes and Relations
Neel Karia, Ayush Kaushal and Faraaz Mallick

DPR at SemEval-2021 Task 8: Dynamic Path Reasoning for Measurement Relation Extraction
Amir Pouran Ben Veyseh, Franck Dernoncourt and Thien Huu Nguyen

CLaC-np at SemEval-2021 Task 8: Dependency DGCNN
Nihatha Lathiff, Pavel PK Khloponin and Sabine Bergler

CLaC-BP at SemEval-2021 Task 8: SciBERT Plus Rules for MeasEval
Benjamin Therien, Parsa Bagherzadeh and Sabine Bergler

6 August 2021 (continued)

THiFly_Queens at SemEval-2021 Task 9: Two-stage Statement Verification with Adaptive Ensembling and Slot-based Operation
Yuxuan Zhou, Kaiyin Zhou, Xien Liu, Ji Wu and Xiaodan Zhu

TAPAS at SemEval-2021 Task 9: Reasoning over tables with intermediate pre-training
Thomas Müller, Julian Eisenschlos and Syrine Krichene

BOUN at SemEval-2021 Task 9: Text Augmentation Techniques for Fact Verification in Tabular Data
Abdullatif Köksal, Yusuf Yüksel, Bekir Yıldırım and Arzucan Özgür

17:30–18:30 Poster session: Tasks 10, 11

+ ***This poster session will also be held at 03:00–04:00 and at 12:30–13:30.***

IITK at SemEval-2021 Task 10: Source-Free Unsupervised Domain Adaptation using Class Prototypes
Harshit Kumar, Jinang Shah, Nidhi Hegde, Priyanshu Gupta, Vaibhav Jindal and Ashutosh Modi

PTST-UoM at SemEval-2021 Task 10: Parsimonious Transfer for Sequence Tagging
Kemal Kurniawan, Lea Frermann, Philip Schulz and Trevor Cohn

Self-Adapter at SemEval-2021 Task 10: Entropy-based Pseudo-Labeler for Source-free Domain Adaptation
Sangwon Yoon, Yanghoon Kim and Kyomin Jung

The University of Arizona at SemEval-2021 Task 10: Applying Self-training, Active Learning and Data Augmentation to Source-free Domain Adaptation
Xin Su, Yiyun Zhao and Steven Bethard

KnowGraph@IITK at SemEval-2021 Task 11: Building Knowledge Graph for NLP Research
Shashank Shailabh, Sajal Chaurasia and Ashutosh Modi

YNU-HPCC at SemEval-2021 Task 11: Using a BERT Model to Extract Contributions from NLP Scholarly Articles
Xinge Ma, Jin Wang and Xuejie Zhang

ITNLP at SemEval-2021 Task 11: Boosting BERT with Sampling and Adversarial Training for Knowledge Extraction
Genyu Zhang, Yu Su, Changhong He, Lei Lin, Chengjie Sun and Lili Shan

6 August 2021 (continued)

Duluth at SemEval-2021 Task 11: Applying DeBERTa to Contributing Sentence Selection and Dependency Parsing for Entity Extraction
Anna Martin and Ted Pedersen

INNOVATORS at SemEval-2021 Task-11: A Dependency Parsing and BERT-based model for Extracting Contribution Knowledge from Scientific Papers
Hardik Arora, Tirthankar Ghosal, Sandeep Kumar, Suraj Patwal and Phil Gooch