# NAACL-HLT 2021

**Multimodal Artificial Intelligence (MAI)** 

**Proceedings of the Third Workshop** 

June 6, 2021

©2021 The Association for Computational Linguistics

Order copies of this and other ACL proceedings from:

Association for Computational Linguistics (ACL) 209 N. Eighth Street Stroudsburg, PA 18360 USA Tel: +1-570-476-8006 Fax: +1-570-476-0860 acl@aclweb.org

ISBN 978-1-954085-25-1

The NAACL 2021 Workshop on Multimodal Artificial Intelligence (MAI-Workshop) offers a unique opportunity for interdisciplinary researchers to study and model interactions between (but not limited to) modalities of language, vision, and acoustic. Advances in multimodal learning allows the field of NLP to take the leap towards better generalization to real-world (as opposed to limitation to textual applications), and better downstream performance in Conversational AI, Virtual Reality, Robotics, HCI, Healthcare, and Education. We invite researchers from NLP, Computer Vision, Speech Processing, Robotics, HCI, and Affective Computing to submit their papers.

- Neural Modeling of Multimodal Language
- Multimodal Dialogue Modeling and Generation
- Multimodal Sentiment Analysis and Emotion Recognition
- Language, Vision and Speech
- Multimodal Artificial Social Intelligence Modeling
- Multimodal Commonsense Reasoning
- Multimodal RL and Control (Human-robot communication and multimodal language for robots)
- Multimodal Healthcare
- Multimodal Educational Systems
- Multimodal Affective Computing
- Multimodal Fusion and Alignment
- Multimodal Representation Learning
- Multimodal Sequential Modeling
- Multimodal Co-learning and Transfer Learning
- Multimodal Active Learning
- Multimodal and Multimedia Resources
- Creative Applications of Multimodal Learning in E-commerce, Art, and other Impactful Areas.

Amir Zadeh – Language Technologies Institute, Carnegie Mellon University Louis-Philippe Morency – Language Technologies Institute, Carnegie Mellon University Paul Pu Liang – Machine Learning Department, Carnegie Mellon University Candace Ross – Massachusetts Institute of Technology Ruslan Salakhutdinov – Carnegie Mellon University Soujanya Poria – Singapore University of Technology and Design Erik Cambria – Nanyang Technological University Kelly Shi – Carnegie Mellon University

## **Table of Contents**

Multimodal Weighted Fusion of Transformers for Movie Genre ClassificationIsaac Rodríguez Bribiesca, Adrián Pastor López Monroy and Manuel Montes-y-Gómez1
On Randomized Classification Layers and Their Implications in Natural Language Generation Gal-Lev Shalev, Gabi Shalev and Joseph Keshet
COIN: Conversational Interactive Networks for Emotion Recognition in Conversation Haidong Zhang and Yekun Chai
A First Look: Towards Explainable TextVQA Models via Visual and Textual Explanations Varun Nagaraj Rao, Xingjian Zhen, Karen Hovsepian and Mingwei Shen
Multi Task Learning based Framework for Multimodal Classification   Danting Zeng 30
Validity-Based Sampling and Smoothing Methods for Multiple Reference Image Captioning Shunta Nagasawa, Yotaro Watanabe and Hitoshi Iyatomi
<i>Modality-specific Distillation</i> Woojeong Jin, Maziar Sanjabi, Shaoliang Nie, Liang Tan, Xiang Ren and Hamed Firooz42
Cold Start Problem For Automated Live Video Comments Hao Wu, François Pitie and Gareth Jones
<i>¡Qué maravilla! Multimodal Sarcasm Detection in Spanish: a Dataset and a Baseline</i> Khalid Alnajjar and Mika Hämäläinen
A Package for Learning on Tabular and Text Data with Transformers Ken Gu and Akshay Budhkar
Semantic Aligned Multi-modal Transformer for Vision-LanguageUnderstanding: A Preliminary Study on Visual QA Han Ding, Li Erran Li, Zhiting Hu, Yi Xu, Dilek Hakkani-Tur, Zheng Du and Belinda Zeng74
GraghVQA: Language-Guided Graph Neural Networks for Graph-based Visual Question Answering Weixin Liang, Yanhao Jiang and Zixuan Liu
Learning to Select Question-Relevant Relations for Visual Question Answering Jaewoong Lee, Heejoon Lee, Hwanhee Lee and Kyomin Jung

## **Conference Program**

Multimodal Weighted Fusion of Transformers for Movie Genre Classification Isaac Rodríguez Bribiesca, Adrián Pastor López Monroy and Manuel Montes-y-Gómez

On Randomized Classification Layers and Their Implications in Natural Language Generation

Gal-Lev Shalev, Gabi Shalev and Joseph Keshet

COIN: Conversational Interactive Networks for Emotion Recognition in Conversation

Haidong Zhang and Yekun Chai

A First Look: Towards Explainable TextVQA Models via Visual and Textual Explanations

Varun Nagaraj Rao, Xingjian Zhen, Karen Hovsepian and Mingwei Shen

Multi Task Learning based Framework for Multimodal Classification Danting Zeng

Validity-Based Sampling and Smoothing Methods for Multiple Reference Image Captioning

Shunta Nagasawa, Yotaro Watanabe and Hitoshi Iyatomi

#### Modality-specific Distillation

Woojeong Jin, Maziar Sanjabi, Shaoliang Nie, Liang Tan, Xiang Ren and Hamed Firooz

*Cold Start Problem For Automated Live Video Comments* Hao Wu, François Pitie and Gareth Jones

¡Qué maravilla! Multimodal Sarcasm Detection in Spanish: a Dataset and a Baseline

Khalid Alnajjar and Mika Hämäläinen

A Package for Learning on Tabular and Text Data with Transformers Ken Gu and Akshay Budhkar

#### Semantic Aligned Multi-modal Transformer for Vision-LanguageUnderstanding: A Preliminary Study on Visual QA

Han Ding, Li Erran Li, Zhiting Hu, Yi Xu, Dilek Hakkani-Tur, Zheng Du and Belinda Zeng

GraghVQA: Language-Guided Graph Neural Networks for Graph-based Visual Question Answering Weixin Liang, Yanhao Jiang and Zixuan Liu

## No Day Set (continued)

*Learning to Select Question-Relevant Relations for Visual Question Answering* Jaewoong Lee, Heejoon Lee, Hwanhee Lee and Kyomin Jung