**EMNLP 2018** 



# **Fact Extraction and VERification**

**Proceedings of the First Workshop** 

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## Introduction

With billions of individual pages on the web providing information on almost every conceivable topic, we should have the ability to collect facts that answer almost every conceivable question. However, only a small fraction of this information is contained in structured sources (Wikidata, Freebase, etc.) – we are therefore limited by our ability to transform free-form text to structured knowledge. There is, however, another problem that has become the focus of a lot of recent research and media coverage: false information coming from unreliable sources.

In an effort to jointly address both problems, herein we proposed this workshop to promote research in joint Fact Extraction and VERification (FEVER). We aim for FEVER to be a long-term venue for work in verifiable knowledge extraction.

To stimulate progress in this direction, we also hosted the FEVER Challenge, an information verification shared task on a purposely-constructed dataset. We received entries from 23 competing teams, 19 of which scored higher than the previously published baseline. We invited descriptions of the participating systems and we received 15 system descriptions, all of which are included in these proceedings. We offered the top 4 systems oral presentations.

For the main workshop, we received 23 submissions, out of which we accepted 14 (3 oral presentations and 11 posters).

#### **Organizers:**

James Thorne (University of Sheffield) Andreas Vlachos (University of Sheffield) Oana Cocarascu (Imperial College London) Christos Christodoulopoulos (Amazon) Arpit Mittal (Amazon)

#### **Program Committee:**

Nikolaos Aletras (University of Sheffield), Fernando Alva-Manchego (University of Sheffield), Isabelle Augenstein (University of Copenhagen), Esma Balkir (University of Edinburgh), Daniele Bonadiman (University of Trento), Matko Bošnjak (University College London), Kris Cao (University of Cambridge), Tuhin Chakrabarty (Columbia University), Weiwei Cheng (Amazon), Bich-Ngoc Do (Heidelberg University), Micha Elsner (The Ohio State University), Diego Esteves (Universität Bonn), Fréderic Godin (ELIS - IDLab, Ghent University), Ivan Habernal (UKP Lab, Technische Universität Darmstadt), Andreas Hanselowski (UKP lab, Technische Universität Darmstadt), Christopher Hidey (Columbia University), Julia Hockenmaier (University of Illinois Urbana-Champaign), Alexandre Klementiev (Amazon Development Center Germany), Jan Kowollik (University of Duisburg-Essen), Anjishnu Kumar (Amazon), Nayeon Lee (Hong Kong University of Science and Technology), Pranava Swaroop Madhyastha (University of Sheffield), Christopher Malon (NEC Laboratories America), Marie-Catherine de Marneffe (The Ohio State University), Stephen Mayhew (University of Pennsylvania), Marie-Francine Moens (KU Leuven), Jason Naradowsky (University College London), Yixin Nie (UNC), Farhad Nooralahzadeh (University of Oslo), Wolfgang Otto (GESIS - Leibniz-Institute for the Social Sciences in Cologne), Ankur Padia (University of Maryland, Baltimore County), Mithun Paul (University Of Arizona), Tamara Polajnar (University of Cambridge), Hoifung Poon (Microsoft Research), Preethi Raghavan (IBM Research TJ Watson), Marek Rei (University of Cambridge), Laura Rimell (DeepMind), Tim Rocktäschel (University College London and Facebook AI Research), Jodi Schneider (UIUC), Claudia Schulz (UKP Lab, Technische Universität Darmstadt), Diarmuid Ó Séaghdha (Apple), Sameer Singh (University of California, Irvine), Kevin Small (Amazon), Christian Stab (UKP Lab, Technische Universität Darmstadt), Motoki Taniguchi (Fuji Xerox), Paolo Torroni (Alma Mater - Università di Bologna), Serena Villata (Université Côte d'Azur, CNRS, Inria, I3S), Zeerak Waseem (University of Sheffield), Noah Weber (Stony Brook University), Johannes Welbl (University College London), Menglin Xia (University of Cambridge), Takuma Yoneda (Toyota Technological Institute)

#### **Invited Speakers:**

Luna Dong (Amazon) Marie-Francine Moens (KU Leuven) Delip Rao (Joostware AI Research, Johns Hopkins University) Tim Rocktäschel (Facebook AI Research, University College London)

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### **Conference Program**

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- 09:15–10:00 Invited Talk: Learning with Explanations Tim Rocktäschel

#### 10:00–10:30 Research Talks 1

- 10:00–10:15 The Data Challenge in Misinformation Detection: Source Reputation vs. Content Veracity Fatemeh Torabi Asr and Maite Taboada
- 10:15–10:30 Towards Automated Factchecking: Developing an Annotation Schema and Benchmark for Consistent Automated Claim Detection Lev Konstantinovskiy, Oliver Price, Mevan Babakar and Arkaitz Zubiaga

#### 10:30–11:30 Research Posters

*Crowdsourcing Semantic Label Propagation in Relation Classification* Anca Dumitrache, Lora Aroyo and Chris Welty

Retrieve and Re-rank: A Simple and Effective IR Approach to Simple Question Answering over Knowledge Graphs Vishal Cunta Manai Chimachatla and Manish Shrivastava

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Joint Modeling for Query Expansion and Information Extraction with Reinforcement Learning

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Belittling the Source: Trustworthiness Indicators to Obfuscate Fake News on the Web

Diego Esteves, Aniketh Janardhan Reddy, Piyush Chawla and Jens Lehmann

#### Thursday, November 1, 2018 (continued)

Automated Fact-Checking of Claims in Argumentative Parliamentary Debates Nona Naderi and Graeme Hirst

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Zero-shot Relation Classification as Textual Entailment Abiola Obamuyide and Andreas Vlachos

*Teaching Syntax by Adversarial Distraction* Juho Kim, Christopher Malon and Asim Kadav

*Where is Your Evidence: Improving Fact-checking by Justification Modeling* Tariq Alhindi, Savvas Petridis and Smaranda Muresan

- 11:30–12:15 Invited Talk: Argumentation Mining and Generation Supporting the Verification of Content Marie-Francine Moens
- 12:15–12:30 Research Talks 2
- 12:15–12:30 *Affordance Extraction and Inference based on Semantic Role Labeling* Daniel Loureiro and Alípio Jorge
- 14:00–14:45 *Invited Talk: Building a broad knowledge graph for products* Luna Dong

#### Thursday, November 1, 2018 (continued)

#### 14:45–15:30 Shared Task Flash Talks

- 14:45–14:50 *The Fact Extraction and VERification (FEVER) Shared Task* Organizers
- 14:50–15:00 Combining Fact Extraction and Claim Verification in an NLI Model Yixin Nie, Haonan Chen and Mohit Bansal
- 15:00–15:10 UCL Machine Reading Group: Four Factor Framework For Fact Finding (HexaF) Takuma Yoneda, Jeff Mitchell, Johannes Welbl, Pontus Stenetorp and Sebastian Riedel
- 15:10–15:20 *Multi-Sentence Textual Entailment for Claim Verification* Andreas Hanselowski, Hao Zhang, Zile Li, Daniil Sorokin, Benjamin Schiller, Claudia Schulz and Iryna Gurevych
- 15:20–15:30 *Team Papelo: Transformer Networks at FEVER* Christopher Malon

#### 15:30–16:30 Shared Task Posters

Uni-DUE Student Team: Tackling fact checking through decomposable attention neural network Jan Kowollik and Ahmet Aker

*SIRIUS-LTG: An Entity Linking Approach to Fact Extraction and Verification* Farhad Nooralahzadeh and Lilja Øvrelid

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*A mostly unlexicalized model for recognizing textual entailment* Mithun Paul, Rebecca Sharp and Mihai Surdeanu

- 16:30–17:15 Invited Talk: Call for Help: Putting Computation in Computational Fact Checking Delip Rao
- 17:15–17:30 *Prizes* + *Closing Remarks* Organizers