ROME 2019: Workshop on Reducing Online Misinformation Exposure

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ABSTRACT

The spread of misinformation online is a challenge that may have an impact on society by misleading and undermining the trust of people in domains such as politics or public health. While fact-checking is one way to identify misinformation, it is a slow process and requires significant effort. Improving the efficiency of fact-checking by automating parts of the process or defining new processes to validate claims is a challenging task with a need for expertise from multiple disciplines. The aim of ROME 2019 is to bring together researchers from various fields such as Information Retrieval, Natural Language Processing, Semantic Web and Complex Networks to discuss these problems and define new directions in the area of automated fact-checking.

KEYWORDS

Misinformation; fact-checking; false news detection

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1 MOTIVATION

The spread of misinformation online undermines the trust of people and there is a global awareness that it may have repercussions on society. For example, sharing of news can lead to polarizing the public discourse ahead of important events, such as elections [1]. In addition, low quality and misleading health information can hinder public health efforts to prevent the spread of diseases [5].

To reduce the exposure of people to misinformation online, fact-checkers manually verify the veracity of claims made in content shared online [2]. However, fact-checking is a slow process involving significant manual and intellectual effort to find trustworthy and reliable information. A fact-checker may have to look for evidence from trustworthy sources and interpret the available information in order to reach a conclusion. Fact checking a single claim and writing the corresponding analysis can take from several hours in the best case to days [4].

Improving the efficiency of fact-checking by providing tools to automate parts of the process [3], or defining other processes for validating the veracity of claims made in online social media, are challenging problems with real impact on society, requiring an interdisciplinary approach to address them. ROME 2019 will provide a space for researchers to discuss these problems and to define new directions for work on automating fact checking, reducing misinformation online, and making social media more resilient to the spread of false news.

2 PURPOSE OF WORKSHOP

The workshop aims to bring together experts from fields such as Information Retrieval (IR), Natural Language Processing (NLP), Semantic Web (SW), and Complex Networks (CN), as well as journalism and fact-checking organizations, to create a forum that will foster collaboration and discussion with the end goal of advancing the state-of-the-art in understanding and reducing misinformation online. The workshop will also provide an opportunity for young researchers to meet experts in this cross-disciplinary area of research and to learn from their expertise, leading to new research ideas. We aim to make ROME 2019 the first one in a series of workshops that bring together experts from diverse fields to focus on the area of online misinformation.

2.1 Topics of Interest

We solicit submissions of research papers on computational fact-checking, false news detection, and the analysis of misinformation spread on social media. Topics of interest include, but are not limited to:

- Claim extraction/detection
- Stance detection
- Claim source detection
- End-to-end evaluation of fact-checking
- Supporting evidence retrieval
- Quantifying and addressing biases in false news detection
- Explainable models for computational fact checking
- Software architectures for large scale false news detection
- Provenance and source detection of claims
- Analysis of the spread of misinformation
- Crowd-sourcing for fact checking

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2.2 Related Workshops

Recently, there has been an increasing number of publications and workshops on the topic of misinformation and false news in different communities. For example, the 1st Workshop on Fact Extraction and Verification (FEVER) was collocated with EMNLP 2018[1], and the 2nd International Workshop on Rumours and Deception in Social Media (RDSM)[2] was collocated with CIKM 2018. The Web Conference also had an Alternate Track on Journalism, Misinformation, and Fact Checking in 2018[3] and a workshop on misinformation in 2019[4]. However, there has not been any event on the topic with a focus on information retrieval. More importantly, ROME 2019 will be the first one to bring together the main communities that we are targeting: IR, NLP, SW, and Complex Networks. SIGIR is the top venue gathering experts in Information Retrieval and has significant overlap with NLP and SW. It also has a long history of significant contributions in the area of evaluation and data set creation, which makes it a suitable venue for addressing topics such as end-to-end evaluation of systems and data set generation for tasks related to misinformation and fact-checking.

3 FORMAT AND PLANNED ACTIVITIES

ROME2019 will be a full day workshop. The workshop will have three invited speakers from diverse backgrounds: Kalina Bontcheva, a professor in Text Analysis from the University of Sheffield, Rocco di Nicola, who is a professor of Computer Science at IMT Lucca and whose research is focused on the foundations of distributed computing, and Gianni Riota, a journalist, former editor in chief of the financial newspaper *Il Sole 24 Ore* and the news bulletin TG1, and Pirelli visiting professor of Italian studies in the Department of French and Italian at Princeton University.

There will be oral presentations for a selection of the accepted submissions as well as a poster session, which will serve as a way to facilitate conversations among the workshop participants. The workshop will close with a panel discussion on the spread of misinformation and ways to reduce it.

4 WORKSHOP ORGANIZATION

4.1 Organizers

Guillaume Bouchard is Research Manager in Facebook AI Integrity group, with the primary goal of reducing misinformation using AI techniques. He authored more than 60 publications in international venues and 50 patents. He received his PhD in Applied Statistics from INRIA in 2005, was senior research scientist for Xerox Research Centre, France and UCL, UK. He was Founder and CEO of Bloomsbury AI, a NLP startup developing question-answering systems in natural language.

Guido Caldarelli is full professor in Theoretical Physics at IMT Lucca. He got is PhD in Theory of Condensed Matter at SISSA in 1996. He worked on the theory of Self-Similar Phenomena as Fractals and Developed the field of Complex Networks from first papers in 2000. He published 200 papers and a number of textbooks on this topic with Oxford University Press and he is now President of the Complex System Society.

Vassilis Plachouras is a Research Scientist in Facebook AI Integrity, London, working on reducing the spread of misinformation online. Prior to that, he was a Software Engineer in Facebook Search. Before joining Facebook, he was a Senior Research Scientist at Thomson Reuters. He has more than 40 publications on IR and related topics.

4.2 Steering Committee

The challenging problems associated with identifying false news and reducing their spread online can be better addressed by a community of researchers from academia and industry. To facilitate the creation of such community, our intention is for this first workshop to evolve into a forum that will be taking place on a regular basis at relevant conferences. To guide this process and facilitate the creation of such a community, we have formed a steering committee with Filippo Menczer (Indiana University, US) and Fabrizio Silvestri (Facebook, UK).

Filippo Menczer is a professor of informatics and computer science at Indiana University, Bloomington, with courtesy appointments in cognitive science and physics. He holds a Laurea in Physics from the Sapienza University of Rome and a Ph.D. in Computer Science and Cognitive Science from the University of California, San Diego. Dr. Menczer is an ACM Distinguished Scientist, a Fellow of the Center for Computer-Mediated Communication, a Senior Research Fellow of The Kinsey Institute, and a board member of the IU Network Science Institute. He previously served as division chair in the IUB School of Informatics and Computing, director of the Center for Complex Networks and Systems Research, visiting scientist at Yahoo Research, Fellow of the Institute for Scientific Interchange Foundation in Torino, Italy, and Fellow-at-large of the Santa Fe Institute. His research focuses on Web and data science, social network analysis, social computation, Web mining, and modeling of complex information networks. His work on the spread of information and misinformation in social media has been covered in many US and international news sources. Menczer received multiple ACM service awards and currently serves as associate editor of the Network Science journal and on the editorial boards of EPJ Data Science and PeerJ Computer Science.

Fabrizio Silvestri is a internationally recognized expert in Information Retrieval, with more than 150 publications in various areas of IR, Search, and Machine Learning. He is member of the Senior PC of various top-tier conferences including SIGIR and he has organized various workshops at various top conferences — including SIGIR, during his career. Fabrizio is currently working on developing novel IR and ML techniques to reduce misinformation online. Prior to that Fabrizio was a Software Engineer for Facebook Search. Prior to Facebook, he has been a Principal Research Scientist at Yahoo Research and a researcher at ISTI-CNR, Pisa, Italy

4.3 Programme Committee

Below, we list the members of the programme committee who agreed to participate in the reviewing process for the workshop. We plan to have three reviews for each submission to the workshop.

- Luca Maria Aiello, Nokia Bell Labs

[1] http://fever.ai/2018/workshop.html
[2] https://bit.ly/2KaHUu7
[3] https://www2018.thewebconf.org/program/misinfoweb/
[4] https://sites.google.com/view/misinfoworkshop

- Aristides Gionis, Aalto University
- Joemon Jose, University of Glasgow
- Udo Kruschwitz, University of Essex
- Julien Leblay, Artificial Intelligence Research Center
- Kyumin Lee, Worcester Polytechnic Institute
- Maria Liakata, University of Warwick
- Huan Liu, Arizona State University
- Ioana Manolescu, INRIA Saclay
- Pushkar Mishra, Facebook
- Preslav Nakov, Qatar Computing Research Institute
- Symeon Papadopoulos, ITI-CERTH
- Aleksandra Piktus, Facebook
- Kashyap Popat, Max Planck Institute for Informatics
- Antonio Scala, Institute for Complex Systems, CNR
- Kai Shu, Arizona State University
- Sumithra Velupillai, KTH Royal Institute of Technology
- Andreas Vlachos, University of Cambridge
- Svitlana Volkova, Pacific Northwest National Laboratory
- Marcos Zampieri, University of Wolverhampton
- Arkaitz Zubiaga, University of Warwick

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[3] Lev Konstantinovskiy, Oliver Price, Mevan Babakar, and Arkaitz Zubiaga. 2018. Towards Automated Factchecking: Developing an Annotation Schema and Benchmark for Consistent Automated Claim Detection. In *Proceedings of the 1st Workshop on Fact Extraction and VERification (FEVER).* Brussels, Belgium.

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