

# PANACEA: PANdemic Ai Claim vEracity Assessment

An AI-enabled evidence-driven framework  
for claim veracity assessment during pandemics

<https://panacea2020.github.io>

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# Team Members



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# Project Partners

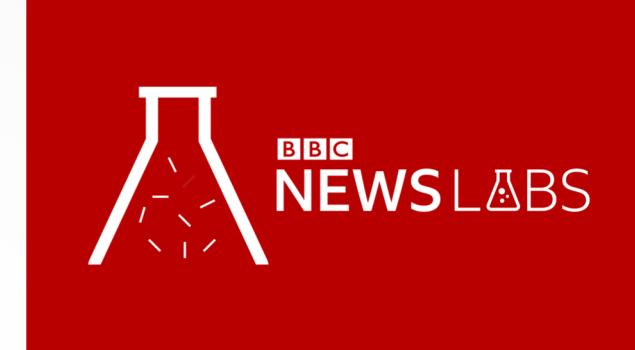


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UK  
RI  
UK research  
and innovation

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Alan Turing  
Institute

The logo for FACTMATA, featuring a stylized graphic of overlapping colored bars in red, teal, and blue, followed by the text 'FACTMATA' in a bold, sans-serif font.



The logo for medwise.ai, featuring a stylized graphic of overlapping purple and blue triangles, followed by the text 'medwise.ai' in a dark blue serif font.

# Motivation

- During the COVID-19 pandemic, national and international organisations are using online platforms to communicate information about the virus to the public.
- Misinformation can strongly influence human behaviour and negatively impact public health interventions. For instance,
  - unreliable treatments could put public safety in danger and increase pressure on the health system;
  - failure to comply with government advice may increase the chance of spreading the disease.
- Veracity assessment of online information is a complex problem.
- A sophisticated conceptual framework combines techniques from natural language processing, evidence retrieval, network analysis, deep learning and visual informatics.

# Research Objectives

RO1

Collect COVID-19 related data from social media platforms and authoritative resources.

RO2

Develop automated methods to extract key information on COVID-19 from trustworthy sources.

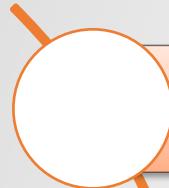
RO3

Develop novel approaches for veracity assessment by incorporating evidence from external sources.

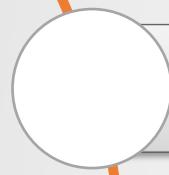
RO4

Validate the methods via a set of new visualisation interfaces.

# Deliverables



D1. COVID-19 related data collected from heterogenous information sources where a subset is annotated with veracity labels ('True', 'False').



D2. An evidence gathering algorithm for extracting COVID-related key information/evidence.



D3. A claim veracity evaluation mode.



D4. An algorithm to study the propagation of misinformation.



D5. A visualisation interface for presentation of results.

# PANACEA Demo

PANACEA

## Cocaine is not a cure for COVID-19! - FactCrescendo | The leading fact-checking website in India

Full document in [english.factcrescendo.com/](https://english.factcrescendo.com/) | Share to   

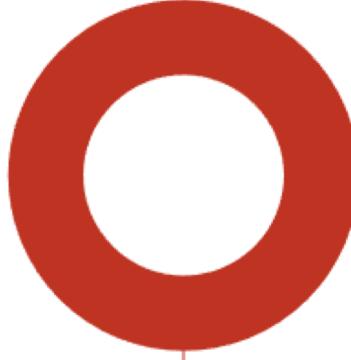
Article related to: cocaine cures coronavirus

Document Content:

Cocaine is not a cure for COVID-19|| for: Cocaine is not a cure for COVID-19! Coronavirus False International Medical March 7, 2020 March 11, 2020 Aavya Ray The internet is flooded with misinformation and panic since December 2019 when the Novel Coronavirus Outbreak started. There is no cure for this rare and new virus that has taken more than 3000 lives till now worldwide. Internet is filled with cures and causes for this disease, while the most recent cure for this disease is said to be Cocaine. Facebook Artist Helper, Bizzle Ozikoya tweeted the same image on his official Twitter account claiming that Cocaine kills Corona Virus. pic.twitter.com/stjYcihGiz — Bizzle Osikoya (@bizzleosikoya) February 3, 2020 Archive Link Fact Check- We started our investigation by searching about cocaine on WHO's website. According to World Health Organization (WHO) 's website , they denied that cocaine can protect against the coronavirus. The website mentioned, "Cocaine is a stimulating and addictive drug. Its consumption causes serious side effects and is detrimental to people's health." Is there a vaccine, drug or treatment for COVID-19? World Health Organization (WHO) report says, "Not yet. To date, there is no vaccine and no specific antiviral medicine to prevent or treat COVID-2019

Document relation to searched sentence?

 Refute



Refute

Stance Filter

All  Refute Stance  Neutral Stance  Support Stance

and epidemic. The post which is also a screengrab in a news format has a text highlighted that read: Cocaine kills coronavirus . ...

<https://www.vishvasnews.com/english>



TYPE: Article

SOURCE: dubawa.org

COCAINE DOES NOT CURE CORONAVIRUS! DUBAWA © 2022 Copyright Warwick NLP Group and QMUL Cognitive Science Research Group Cocaine Does NOT Cure Coronavirus! Paper? Mainstream Cocaine Does NOT Cure Coronavirus!

# PANACEA Demo



# Workshop Program



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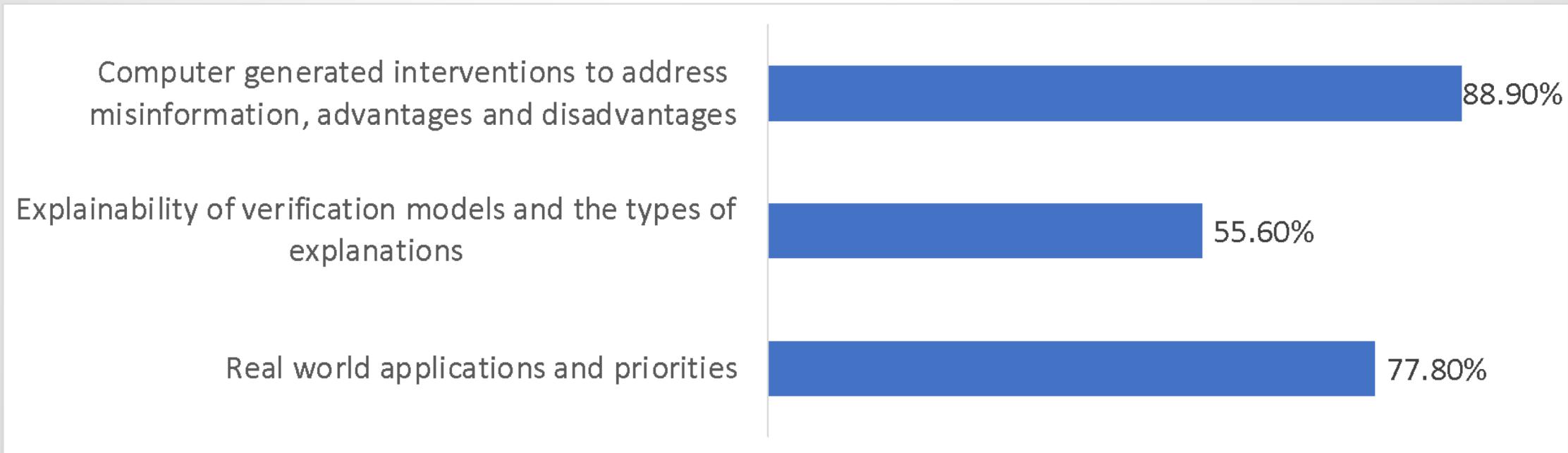
10:10 - 10:55	<b>Invited talk:</b> Fact-checking as a conversation <i>Andreas Vlachos, University of Cambridge</i>	13:30 - 13:45	Learning Disentangled Latent Topics for Twitter Rumour Veracity Classification <i>John Dougrenz-Lewis, University of Warwick</i>
10:55 - 11:15	Natural Language Inference with Self-Attention for Veracity Assessment of Pandemic Claims <i>Miguel Arana Catania, University of Warwick and Cranfield University</i>	13:45 - 14:00	Active PETs: Active Data Annotation Prioritisation for Few-Shot Claim Verification with Pattern Exploiting Training <i>Xia Zeng, Queen-Mary University of London</i>
<b>11:15 - 11:35</b>	<b>Coffee break</b>	14:00 - 14:15	Disentangled Learning of Stance and Aspect Topics for Vaccine Attitude Detection in Social Media <i>Lixing Zhu, University of Warwick</i>
11:35 - 11:55	Evaluating the Generalisability of Neural Rumour Verification Model <i>Elena Kochkina, Queen-Mary University of London</i>	<b>14:15 - 14:30</b>	<b>Coffee break</b>
11:55 - 12:15	Some Observations on Fact Checking Work <i>Rob Procter, University of Warwick</i>	14:30 - 15:15	Break-out discussion
12:15 - 12:30	PANACEA demonstration <i>Runcong Zhao, University of Warwick</i>	15:15 - 15:55	Presentation and discussion
<b>12:30 - 13:30</b>	<b>Lunch</b>	<b>15:55 - 16:00</b>	<b>Wrap up</b>

# Publications

- M. Arana Catania, E. Kochkina, A. Zubiaga, M. Liakata, R. Procter and Y. He. [Natural Language Inference with Self-Attention for Veracity Assessment of Pandemic Claims](#), *2022 Annual Conference of the North American Chapter of the Association for Computational Linguistics (NAACL)*, Jul. 2022.
- L. Zhu, Z. Fang, G. Pergola, R. Procter and Y. He. [Disentangled Learning of Stance and Aspect Topics for Vaccine Attitude Detection in Social Media](#), *2022 Annual Conference of the North American Chapter of the Association for Computational Linguistics (NAACL)*, Jul. 2022.
- J. Dougrez-Lewis, M. Arana Catania, E. Kochkina, M. Liakata and Y. He. [PHEMEPlus: Enriching Social Media Rumour Verification with External Evidence](#), *The 5th FEVER Workshop, co-located with ACL May 2022*.
- J. Dougrez-Lewis, E. Kochkina, M. Liakata and Y. He. [Learning Disentangled Latent Topics for Twitter Rumour Veracity Classification](#), *ACL Findings*, Aug. 2021.
- E. Kochkina, T. Hossain, R.L. Logan IV, M. Arana-Catania, R. Procter, A. Zubiaga, S. Singh, Y. He and M. Liakata. *Evaluating the Generalisability of Neural Rumour Verification Models. (Under journal submission, August 2022.)*
- W. Zhang, L. Gui and Y. He. [Supervised Contrastive Learning for Multi-modal Unreliable News Detection in COVID-19 Pandemic](#), *The 30th ACM International Conference on Information and Knowledge Management (CIKM)*, Nov. 2021.
- J. Si, D. Zhou, T. Li, X. Shi and Y. He. [Topic-aware Evidence Reasoning and Stance-aware Aggregating for Fact Verification](#), *The 59th Annual Meeting of the Association for Computational Linguistics (ACL)*, Aug. 2021.
- X. Zeng, A. S. Abumansour and A. Zubiaga. [Automated fact-checking: A survey](#), *Language and Linguistics Compass*, 2021.
- X. Zeng and A. Zubiaga. [QMUL-SDS at SCIVER: Step-by-Step Binary Classification for Scientific Claim Verification](#), *Proceedings of the Second Workshop on Scholarly Document Processing*, co-located with ACL 2021.
- A. S. Abumansour and A. Zubiaga. [QMUL-SDS at CheckThat! 2021: Enriching Pre-Trained Language Models for the Estimation of Check-Worthiness of Arabic Tweets](#), *CLEF Working Notes*, 2021.

# Break-Out Discussion

Please vote for the topic(s) that you would like to discuss in our break-out session. You can select multiple topics





# Invited Talk

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## Fact-checking as a conversation

Dr. Andreas Vlachos  
University of Cambridge