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ITU-T Focus Group on AI for Health

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Abstract: This document contains the Call for Participation in the Topic Group "AI for Traditional Medicine" (TG-TM). The purpose of the Call for Participation is to call on members of the medical and artificial intelligence communities with a vested interest in the topic to become engaged in the TG-TM.

ITU/WHO Focus Group on artificial intelligence for health (FG-AI4H)

Call for Topic Group Participation: AI for Traditional Medicine

The International Telecommunication Union (ITU)/World Health Organization (WHO) Focus Group on "Artificial Intelligence for Health" (FG-AI4H; https://itu.int/go/fgai4h) seeks engagement from members of the medical and artificial intelligence (AI) communities (including clinicians, technologists, entrepreneurs, potential benchmarking data providers, machine learning experts, software developers, researchers, regulators, policy-makers, companies/institutions, and field experts) with a vested interest in shaping the benchmarking process of AI for Traditional Medicine.

1   About FG-AI4H

Over the past decade, considerable resources have been allocated to exploring the use of AI for health, which has revealed an immense potential. Yet, due to the complexity of AI models, it is difficult to understand their strengths, weaknesses, and limitations. If the technology is poorly designed or the underlying training data are biased or incomplete, errors or problematic results can occur. AI technology can only be used with complete confidence if it has been quality controlled through a rigorous evaluation in a standardized way. Towards developing this standard assessment framework of AI for health, the ITU has established FG-AI4H in partnership with the WHO.

Thus far, FG-AI4H has established 24 topic groups. The topic groups are: use of AI in cardiovascular disease management, dermatology, diagnoses of bacterial infection and anti-microbial resistance, falls among the elderly, histopathology, malaria detection, maternal and child health, neurological disorders, ophthalmology, outbreak detection, psychiatry, radiology, snakebite and snake identification, symptom assessment, tuberculosis, volumetric chest computed tomography, dental diagnostics and digital dentistry, AI based detection of falsified medicine, primary and secondary diabetes prediction, endoscopy, and AI for traditional medicine

Each topic group agrees upon representative benchmarking tasks in a pragmatic, best-practice approach, which can later be scaled and expanded to similar tasks. Every benchmarking task should address a health problem of relevance (e.g. impacting a large and diverse part of the global population or challenging to treat) and for which AI technology would provide a tangible improvement relative to the current practice (e.g. better care, results, and/or cost/time effectiveness).

For a rigorous and sound evaluation, undisclosed test data sets must be available (or have to be collected) for each task. All data must be of high quality and compliant with ethical and legal standards. In addition, the data must originate from a variety of sources so that it can be determined whether an AI algorithm can generalize across different conditions, locations, or settings (e.g. across different people, hospitals, and/or measurement devices). The format/properties of the data serving as input to the AI and of the output expected from the AI, as well as the benchmarking metrics are agreed upon and specified by the topic group.

Finally, the AI-to-be-evaluated will be benchmarked with the undisclosed test data on FG-AI4H computing infrastructure. Here, the AI will process single samples of the undisclosed test data set and predict output variables, which will be compared with the "ground truth." The results of the benchmarking will be provided to the AI developers and will appear on a (potentially anonymized) leaderboard.

2   Topic group: AI for Traditional Medicine

A topic group is a community of stakeholders from the medical and AI communities with a shared interest in a topic. The objectives of the topic groups are manifold:

1.   to provide a forum for open communication among various stakeholders,

2.   to agree upon the benchmarking tasks of this topic and scoring metrics,

3.   to facilitate the collection of high-quality labelled test data from different sources,

4.   to clarify the input and output format of the test data,

5.   to define and set-up the technical benchmarking infrastructure, and

6.   to coordinate the benchmarking process in collaboration with the Focus Group management and working groups.

The primary output of a topic group is one document that describes all aspects of how to perform the benchmarking for this topic. (The document will be developed in a cooperative way by suggesting changes as input documents for the next FG-AI4H meeting that will then be discussed and integrated into an official output document of this meeting. The process will continue over several meetings until the topic description document is ready for performing the first benchmarking.

This topic group is dedicated to AI for Traditional Medicine.

This topic description document specifies the standardized benchmarking for Traditional Medicine systems. It serves as deliverable No. [DEL.10.23] of the ITU/WHO Focus Group on AI for Health (FG-AI4H).

More details about the activities of the topic group can be found in the documents https://extranet.itu.int/sites/itu-t/focusgroups/ai4h/tg/SitePages/TG-TM.aspx. These can be accessed with a free ITU account (cf. "Get involved").

Current members of the topic group on AI for Traditional Medicine include:

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Mr Ram N Kumar, CEO, Nirog Street, Ayuveda Expert. NirogStreet is a unique concept in the Ayurveda healthcare ecosystem. It was founded in June 2016. We are an impact organization striving to make Ayurveda the first call of treatment for people. Our technology-driven platform provides access to authentic Ayurveda doctors on a global scale. As the world is quickly moving from reactive to proactive healthcare, the demand for holistic healing methods such as Ayurveda is at an all-time high. Our Community-first approach leverages the wide network of practitioners and students to promote health and wellness in the society

Ayurvedic Point, Milan, Italy

Dr. Antonio Morandi, Scientific Director of the ICAM 2016 Chairman & Director, Ayurvedic Point, Milan, Italy President, Italian Scientific Society for Ayurvedic Medicine.

eGestalt Technologies, Bengaluru, India

V. Rangamannar, Software Architect, eGestalt Technologies Pvt. Ltd. Bengaluru

National Institute of Technology, Rourkela, India

Ms Usha Rani, B.Tech (College of Engineering, Osmania University, Hyderabad, India), Persuing M.Tech-Biomedical Engineering. Has work in development of prototypes for Breath Analysis, Urinalysis, Sweat Analysis based on Ayurveda diagnosis as Senior Research Fellow at National Institute of Indian Medical Heritage, Hyderabad

Ministry of Ayush, Government of India

Dr. T. Saketh Ram, Research Officer (Ayurveda), National Institute of Indian Medical Heritage, under Central Council for Research in Ayurvedic Sciences (CCRAS), Ministry of Ayush, Government of India.

The topic group would benefit from further expertise of the medical and AI communities and from additional data. In particular we want to invite groups that are working with traditional medicine diagnostics, product standardization, therapeutics, ontology and linguistic framework and other allied disciplines in this domain.

3   Get involved

To join this topic group, please send an e-mail to the focus group secretariat (tsbfgai4h@itu.int) and the topic driver (dr.saketram@gmail.com). Please use a descriptive e-mail subject (e.g. "Participation topic group AI for Traditional Medicine."), briefly introduce yourself and your organization, concisely describe your relevant experience and expertise, and explain your interest in the topic group.

Participation in FG-AI4H is free of charge and open to all. To attend the workshops and meetings, please visit the Focus Group website (https://itu.int/go/fgai4h), where you can also find the whitepaper, get access to the documentation, and sign up to the mailing list.

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