



### SCO-Young Scientist Profile

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#### **Details of research work carried out in S&T (limit to 200 words)**

Today multimodal approach is relevant in any sphere of our digital life. The technologies aim to suggest the best and the most comfortable way for human-human and human-machine interaction. The multimodal approach may help us to monitor the condition of a person who is ill with Covid-19 through various sensors, smartphones, smart vehicles and so on. The research topic is connected with development of a multimodal system for monitoring the health status of the person in a pandemic situation. We outlined the possible communication channels for illness detection and possible modalities. We consider the architecture of such a system and its algorithms.

*Associated SCO-YSC Theme: Combating COVID-19 and emerging pandemics through research and innovation*

#### **Statement of Innovation (Brief information on new innovative ideas including startup / entrepreneurs- limit to 150 words)**

The proposed architecture of the multimodal system for monitoring the health status of the person supposes the multimodal data transmission. Under the architecture when mobile user terminals have access to the information system the data transmission takes place in an unstable network environment or in the conditions of the user's movement, where the mobile user's terminal does not have permanent access to any fixed access point to the network. Moreover, the usage of wireless network technologies is more vulnerable to security threats that are more important for multimodal information. One approach to mitigate the problem is to dynamically offload parts of the traffic to another technology that supports good network connection. Offloading can be performed seamlessly by deploying multipath transport protocols that incorporate mechanisms to distribute the load over the available network interfaces. Thus, user's applications work with different access networks in a heterogeneous environment simultaneously.

#### **Major awards/ Achievements (Upto 3 awards)**

- 1) Participant of the 4th BRICS Young Scientist Forum, 2019
- 2) Winner of the competitive tender of the Council on grants of the President of the Russian Federation, 2019

**Shanghai Cooperation Organization- 1<sup>st</sup> Young Scientists Conclave (SCO-YSC 2020)**  
**A virtual event organised in India at CSIR-IICT, Hyderabad**  
**Theme: Shaping SCO-STI Partnership: Young Scientists Perspectives**

3) Visitor researcher in Technical University of Berlin (Germany) in 2013 and 2016.

**Possible collaboration with SCO countries** *(limit to 100 words)*

Collaboration between colleagues of SCO countries is possible only in case their acquaintance. The best variant is face-to-face. However, due to the pandemic situation and various restrictions, we may choose one facilitator and Council for each panel who obtain information about research of all participant. They should organize the panel discussions throughout the year.

Since the SCO countries have in many spheres the common problems, the thematic conferences and exchange programs is also a good idea to maintain collaboration.

There should also be the visitor research grants to provide and force the joint research of SCO countries.

**Key words** *(relevant to research work conducted as well as proposed innovation, 5-6 words)*

Multimodal information and communication, multipath data transmission