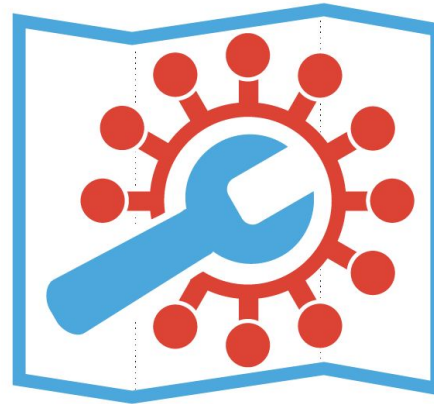


Ishita Sharan

IIT Kharagpur alum - over 20 years of software industry experience

Passionate about Technology in Healthcare



COVID-19 Projects

Remote Detection of Vital Signs



Prognosis, Diagnosis & Screening for COVID-19 patients using sensors & AI

https://vitalsign.ai/team_b-id115/

Solution: An app installed in smartphone/laptop that can analyze

1. Breathing characteristics
2. Blood oxygen saturation
3. Hemoglobin level
4. Heart Rate. Heart Rate Variability

International project: Participants from all over US, India, Australia, Europe

Pilot Run in: Pakistan and Germany

Wikipedia + Yelp for COVID Trials



Crowd sourced clinical trial information about COVID-19 trials -
<https://covid.clinwiki.org>

Goal: make finding relevant vaccine and treatment trials faster.

- Crowd source review of trial based on scientific judgment, risks/benefit of trial
- Add keyword, descriptors
- Make trial content easy to understand, add links, reference, science, media

International project: Participants from all over the world

Solid State Nano Pore Device



Device that can count individual SARS-CoV-2 virions in bodily fluids –
<https://www.crunchbase.com/organization/demonpore>

What:

- Mechanical nanopores to create a molecular sensing platform – size of pore can be changed dynamically
- Unique Electrical signals identify molecule
- Can be regenerated
- Y Combinator startup

Other interesting projects



- Bluetooth stethoscope : <https://github.com/zipzit/Covid-Bluetooth-Stethoscope>
- Telemedicine solution for cancer patients impacted by COVID-19
- Communication app for mechanically ventilated patients
- Tools to help medical providers estimate capacity needs
- Yelp-care for reviewing places according to COVID-19 prevention measures
- App for seniors to combat loneliness
- 3D printed ventilator splitters – used by 4 people instead of 2

AI/ML for Antivirals and Vaccines



Vaccines:

- AI used to analyze the RNA structure of COVID-19 virus
- Subsequent feature extraction, feature selection used to predict candidate
- AI used to predict protein and molecular interaction

Antivirals:

- AI for drug repurposing. Deep learning based drug-target interaction
- Search for drugs based on chemical properties using knowledge graph created using ML (structured medical information extracted from scientific literature)

Thank You
