



Tata Centre
for Technology
and Design
IIT Bombay

TURNING POINT

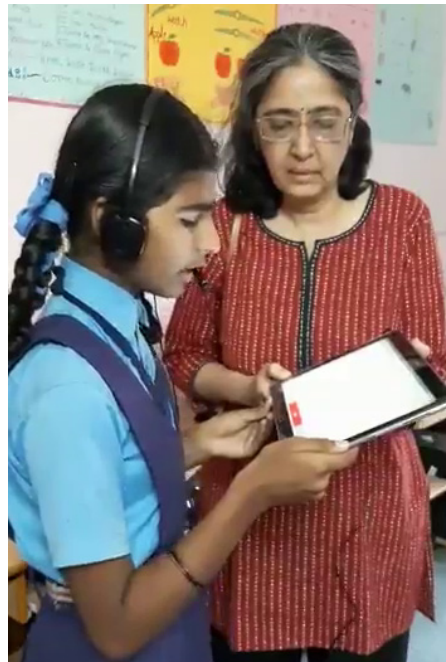


Tata Centre Newsletter, April 2022

Speech Assessment Application

EDUCATION

The project Spoken Language Assessment on Mobile Devices led by Prof Preeti Rao, from the Dept. of Electrical Engineering is jointly developing an application 'Happy Lingo' with Tata Centre for Technology and Design, IIT Bombay, and WPP India CSR Foundation to address the challenges in the education system using a speech assessment tool. The application will provide



INDEX

- Speech assessment application
- Just a click - for a healthier tomorrow
- Tata Fellows Offline meet
- Teaching end-to-end innovation online

feedback on oral reading accuracy and fluency with automatic speech recognition and prosody evaluation. The evaluation is being done on audio recordings and the AI/ML technology generates assessment reports on the basis of established reading global standard rubrics while the dashboard displays reports on reading accuracy, fluency, expressiveness, and confidence. The usage of the application has seen useful results in rural, peri-urban as well as urban schools. The advantage of Happy Lingo is an objective, reliable, scalable, enjoyable, comprehensive tool that provides real-time data to its users. The aim is to build the app to assess students across multiple languages like Hindi and other regional languages along with scaling the app outside India wherever literacy challenges exist.



Using the spoken language assessment system.

Just a click - for a healthier tomorrow

Healthcare



Non-invasive cervix screening

The GynaeCam Project team visited 'Bhojaya Sarvodaya Trust Hospital', Kutch, Gujarat, for the purpose of cervical screening. This camp was organized by the hospital for screening women's health and creating awareness among women. There were 80 patients from the villages nearby, traveling a distance of 200 km who came to the OPD for consultation with the gynecologists. Out of the 80 patients that came in, 35 patients who were in the age group of 27- 47 years were screened using the GynaeCam with the help of 2 gynecologists. The team at TCTD captured every other detail with regard to the patients, capturing images

of the cervix, problems they came in with and also the recommendations made by the doctors. The screening helped the doctors in recommending further treatment for more than 10 plus patients with some type of disorder in their cervix. The project team used the GynaeCam and helped the gynecologist to understand various gynaec issues that could be observed through screening and how this could benefit the patients.

Another camp was organized at Nallasopara, Mumbai where the team from TCTD visited and screened around 36 patients with the help of a gynecologist. This screening brought about huge awareness among the doctors present there. These doctors then visited TCTD office to learn more about the GynaeCam device so that they could train health workers to use it for an upcoming camp that was organised at Andheri where 80 patients were screened.

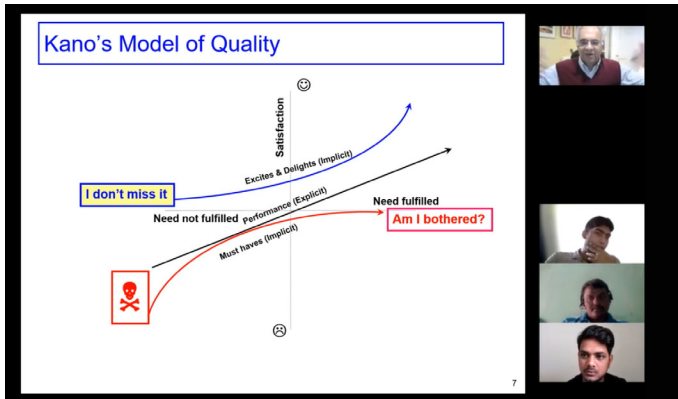


GynaeCam device used for screening

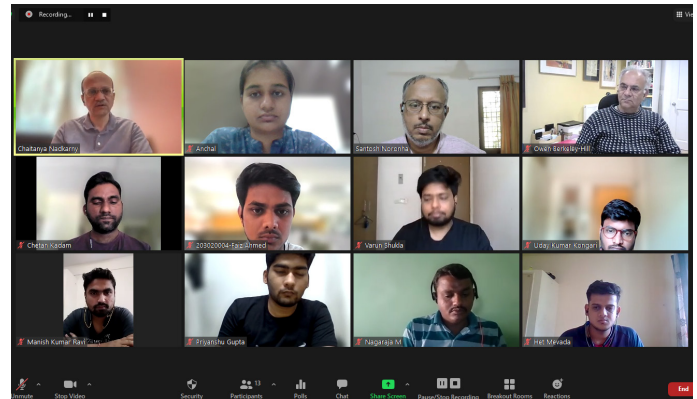


Gynaecamp organized at Bhojaya Sarvodaya Trust Hospital, Kutch, Gujarat,

Teaching end-to-end innovation online

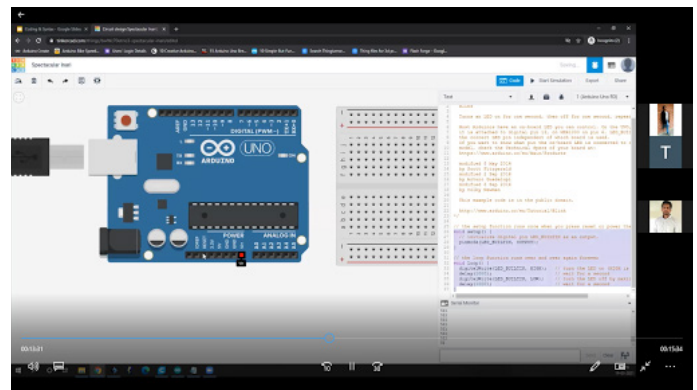


Lean Methodology by Prof Owen Berkeley-Hill (UK)



Lecturer by Chaitanya Nadkarni (STARS Forum)

The Academic Program at Tata Centre for Technology and Design (TCTD), offered its SOM courses every Wednesday and Friday virtually under ProSeminar during the pandemic, ensuring that the student's interests, attendance, and interactions were unwavering. The objective was to enable students to apply the conceptual knowledge learned in ProSeminar-I (SOM 629, SOM 630 & CL 724) on real-time projects, customer discovery interviews, learn problem-solving approaches, research designs for need identification/need validation, and use these qualitative and quantitative research techniques on their own projects, and understand frameworks used in social entrepreneurship through documented and real case studies and guest interactions. Guest faculty sessions with speakers such as Prof Owen Berkeley-Hill (UK), Ex-visiting Professor at IIT Bombay, Shailesh J Mehta School of Management, brought to the students' case studies on Lean Methodology, Dr. Jerry Rao - case studies from the affordable housing sector and Kavita Arvind from Chidiya Udd, Bengaluru, conducted four sessions on Design Thinking which were very interactive. The Principal Investigators of TCTD projects also showcased their journey from an idea to a successfully formed startup. Prof Sanjay



Learning arduino through simulation

Mahajani spoke about the Feasibility study of Jaggery making and related products which initiated a startup called Revotech Industries Pvt. Ltd. Prof Alka Hingorani and Prof Arti Kalro spoke about the LETS project which formed the section 8 company - LeTS Foundation.

Teaching students virtually must have seemed like a crazy idea two years ago. The education scenario had changed since then due to the pandemic, Covid-19, whereby teaching was done through remote learning. Gone were the morning wishes, the hustle, and bustle in the corridors, or the conversations in the classrooms. There were very few opportunities to know each other better as we lacked face-to-face communication.



Tata Fellows Offline meet

As soon as there was a fall in the cases and the govt decided to open offices and institutions, the first thing that came to our mind was to interact with our Tata Fellows of the 2021-2023 batch. In March, Professors Arti Karlo, Santosh Noronha, Shishir Jha, and Sarthak Gaurav along with the TCTD staff invited the Tata Fellows for a small fellowship meeting.



Get together of Tata Fellows batch 2020-2022



Challenges and Opportunities in the Engineering Profession by Dr. Milind Sohoni.

We had a good time interacting with all the students for almost 2 hours on a personal level. Many of them, though they were being taught, were recognized only by their voice. Now, we were able to give a face to all the names that before were mere screen names. We ended our session with a light snack and hoped and wished that the interaction with the fellows would continue to be on a personal level and no more on the screen.



Securing IP rights by Dr. Padma Satish

Towards the end of April, it was possible to conduct two lectures offline, one being on securing IP rights by Dr. Padma Satish and another on Challenges and Opportunities in the Engineering Profession by Dr. Milind Sohoni. The final term presentations were also conducted at the TCTD lab.

Tata Centre for Technology and Design, IIT Bombay

Website: www.tatacentre.iitb.ac.in
Email: office.tctd@iitb.ac.in
Phone: +91 22 2576 5900/01

Editor: Anchal Shrivastava & Beryl Stanley
Design & Photos: Umesh Jambure, Romit Patil

