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Coffee & Code ;

An Initiative by the Department of Computer Engineering

VISION

To be recognized as a department that provides quality technical education and research opportunities that eventually caters to helping and serving the community.

MISSION

- To groom the students to participate in curricular and co-curricular activities by providing efficient resources.
- To motivate the students to solve real world problems to help the society grow.
- To provide a learning ambience to enhance innovations, team spirit and leadership qualities for students.

Contents:

Prepared by:

MS. APURVA CHAUDHARI
MRS. HEZAL LOPES
MR. SRIDHAR IYER
MR. RAVI NAGAR

In Association with

CESA

(Computer Engineering Student Association)

Tech that will change your life in 2021

A pandemic that ravaged the world and accelerated the digital transformation of, well, everything? Not even the best of futurists or Magic 8 ball-shaking psychics could have predicted the year that was 2020. But we will strive to reach a new normal, and you'll see technology helping us there, too, from new hybrid work practices to high-tech masks.

Pandemic-Inspired Innovation

Masks, webcams and sanitizers for our bodies... and our gadgets. The pandemic sparked a reliance on things our 2019 selves couldn't ever have imagined. Portable versions of UV sanitizers for cleaning your phones and gadgets are on the way to keep in your car or your pocket. Another thing we may eventually never leave home without? High-tech masks. Expect a range of built-in features: Bluetooth and microphones (see Maskfone), a fan-powered wearable air purifier (see LG PuriCare), a mask with a UV LED (see the UV Mask). Look for air-quality sensors, contact-tracing assistance and more. You may even end up wearing a social-distancing sweater. SimpliSafe, a home-security company, made a version that sounds an alarm when someone comes within 6 feet of you. Intended as a fun prototype, the sweater sold out immediately.

Laptops Arm Up

Suddenly, laptops aren't the most boring gadget in the world. Our reliance on them for at-home work and school spurred demand the category hadn't seen in years. The move from chips based on Intel's x86 architecture to ones based on lower-powered Arm technology, like the ones inside phones, is setting the entire computing industry on a new course. Lenovo, Acer and Microsoft have begun releasing Windows or Chrome OS laptops with chips from Qualcomm, whose processors power the most popular Android phones. This will only accelerate in the coming year, with nearly every major Windows PC maker working with Qualcomm on laptops and some models even gaining 5G, said Qualcomm President Cristiano Amon.

Apple, which plans to transition its entire Mac lineup to its own processors by 2022, is also expected to release a long-anticipated new iMac, among other things. And it won't come as a surprise when more tech giants, including Amazon and Microsoft, embrace their own custom chips in everything from laptops to servers to wearables.
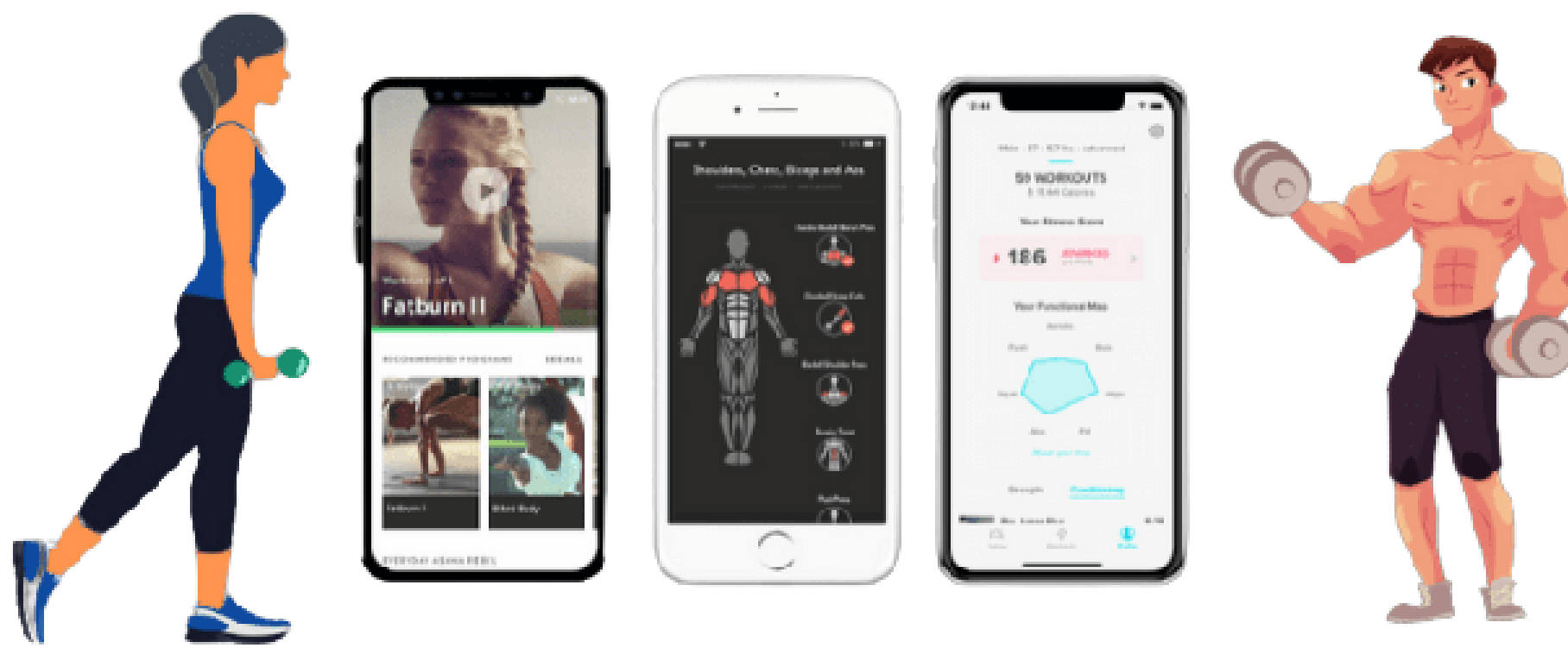
More Remote Workouts... and Doctor Visits

At-home health is here to stay. Downloads of health and fitness apps grew by 46% world-wide in the first half of 2020, according to MoEngage, a marketing research firm. Doctor checkups are changing, too. Hospitals used phone, interactive video and messaging to minimize contact with coronavirus patients, after fast-tracking new telemedicine systems. In March, federal authorities loosened health privacy regulation to allow health-care providers to facilitate visits over FaceTime, Facebook Messenger, Zoom or Skype.

Reality: Assisted, Not Augmented

When will Apple release a pair of smart glasses? Probably not 2021. And while Google made a big step in this category this summer by acquiring North, a pioneer in projection glasses, it canceled the second version of North's glasses as it plots its future. It's actually Facebook that declared it will launch smart glasses in 2021—and they'll be Ray Bans. Facebook Chief Executive Mark Zuckerberg said in September these glasses will be "the next step on the road to augmented reality." They won't feature virtual objects that appear to interact with the real world. AR headsets like Microsoft's Holo Lens might deliver an immersive experience, but they're still expensive and cumbersome."Assisted reality" glasses—which project text, images and even video feeds into a person's field of view—are of more value now, says Brian Ballard, CEO of remote-expertise company Upskill. Businesses have found utility in remote video conferencing that hovers in workers' field of view, or turn-by-turn directions they don't have to look down to follow.
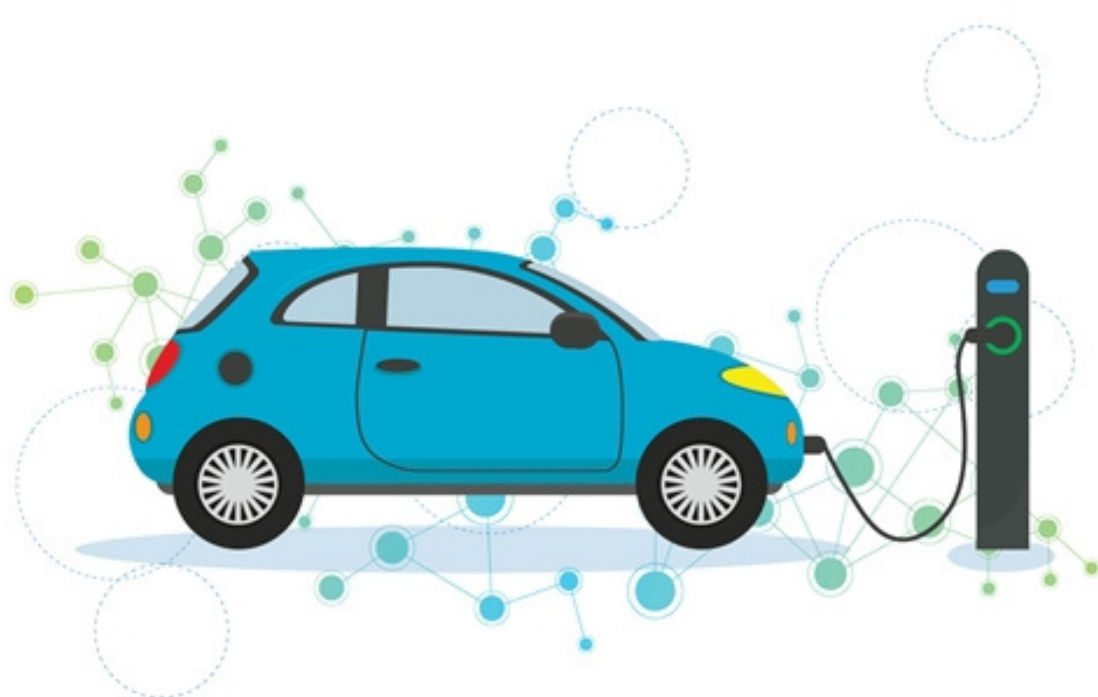
EV, American Style

Look, electric vehicles are cool, but few bear any resemblance to good old Detroit steel. That changes in 2021 with the anticipated arrival of some green beasts.This summer, startup Rivian expects to ship the already-sold-out launch editions of its first-generation R1T pickup and R1S SUV, machines with ranges of over 300 miles and price tags starting around $70,000. Ford expects to have its own battery-powered monster, the F-150 Electric, on sale in mid-2022. Back in pre-pandemic times, the company filmed a prototype towing over a million pounds. And sometime in late 2021 or early 2022, we might even see Tesla's Cybertruck. This past year brought battery-powered SUVs from the likes of Toyota, Audi and Jaguar, and the trend will continue: In 2021, more than half of the battery-electric and plug-in hybrid options on the U.S. market will be SUVs—82 models total, as opposed to 66 passenger-car models, according to forecasts by AlixPartners, a global consulting firm.

Tesla of Agriculture: 'Best Agri-Tech Startup' Can Analyze Food Quality in 30 Secs

Taranjeet Singh Bhamra, CEO of AgNext, speaking to The Better India

"It's like an MRI for food. In less than 30 seconds, Qualix Technology can analyse every aspect of food that we can trade."

Taranjeet Singh Bhamra, a graduate of agricultural engineering from IIT-Kharagpur, was a project manager working for a food manufacturing company in early 2004 when he visited the local mandi in Shahjahanpur, Uttar Pradesh. Working with the company since 2002, he was travelling to different corners of rural India to better understand the issues associated with the agriculture sector. What he saw at Shahjahanpur changed him immeasurably. "Farmers get paid twice in a year, but their performance is never given due consideration since prices for their produce are set arbitrarily. Season after season a farmer arrives at the mandi with his produce and faces the same situation. Thus, farmers have no incentive to improve their practice. For food processing businesses, traders and other allied players in agri-commodities, this is a bigger concern because they are purchasing millions of tonnes from farmers without any proper qualitative assessment. Finally, for consumers, this is obviously a problem because of concerns surrounding adulteration," he says.

Creating an 'MRI for food'

Upon his return to India, Taranjeet met with experts in different agricultural universities and key stakeholders in the business. What he found was that the same problems existed in Indian agriculture, but technology had changed immeasurably with the growth of artificial intelligence, computer vision (an interdisciplinary field that deals with how computers can gain high-level understanding from digital images/videos) and spectral science.To facilitate his research, Taranjeet founded a startup, AgNext, in 2016, and began hiring scientists from his alma mater. For the next three years, the IIT-KGP incubated startup dedicated themselves to research work and building a system that would address their core concern. Fortunately, they had investors who truly believed in their idea because they saw genuine long term potential. Based out of Punjab today, the startup is a leading technology platform for agribusinesses aiming to solve the problem of food quality to accelerate transactions and build sustainability. Its breakthrough proprietary solutions using AI, Spectral Science, Computer Vision and IoT Sensing are changing the approach of agribusinesses towards procurement, trade, production and consumption of commodities like milk, tea, grains, animal feed and spices, claim AgNext. They have created a singular platform called Qualix Technology through which multiple agri-commodities can be assessed in just 30 seconds. "It's like an MRI for food. In less than 30 seconds, Qualix can analyse every aspect of food that we can trade. Our Qualix Technology is an AI-enabled revolutionary platform that instantly analyses quality and safety and provides traceability of agri-commodities.

Qualix Technology

AgNext is a startup which functions at the mid-stream of the agriculture sector, which is the period just after the harvest when procurement is happening. That's where their technology sits. What they are solving is quality and hence their motto 'Quality Food For Billions'. Qualix Technology assesses the physical quality and chemical properties of food. To analyse the physical quality,

Making a case for tea

Once Qualix caught on the agricultural sector, everyone wanted a piece of their technology. In 2018, the Tea Research Association (TRA) partnered with AgNext to develop TRAGNEXT, an offshoot of Qualix. Deployed in tea estates of Goodricke, Rossell Tea and Bokahola Tea, TRAGNEXT employs computer vision to ascertain the fine leaf count (FLC) percentage within just two minutes. This eradicates any manual method of checking tea leaf quality. "Automation and digitisation of processes and operations is a necessity for the tea industry. The recent initiative of AgNext in developing a fine leaf count machine is a step in the right direction. We are looking forward to further improvements in the machine which will calculate fine leaf count by numbers and weight. Also, it will calculate surface moisture to arrive at the net weight of the leaf," says JS Chahal, General Manager (Production) at Rossell Tea.

Accolades and Looking Ahead

Last year, AgNext received the Best AgriTech Startup of India award from the Union agriculture minister, Narendra Singh Tomar, during the Outlook Agriculture Conclave & Swaraj Awards 2020. At this juncture, AgNext is a B2B enterprise and in the next few years, they are looking to scale up to at least 60 countries. Thus far, it has received funding worth USD 4.1 million from venture capital funds Omnivore and Kalaari Capital.

Tea Fine Leaf Count solution placed at Tea Research Association Jorhat
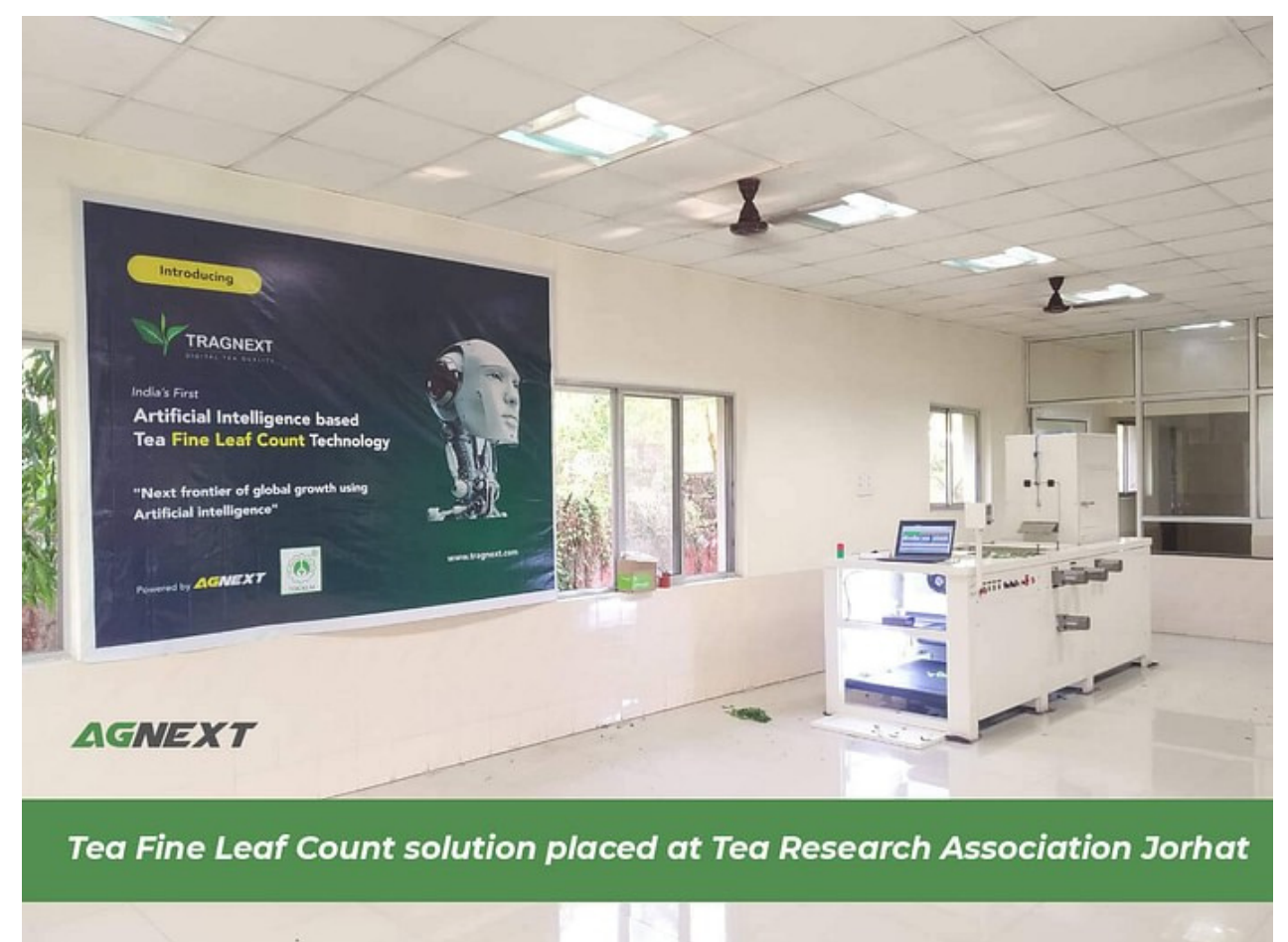
"Our tech benefits businesses and farmers and we will continue to witness the positive impact of our work. The business model we have created, where we only charge businesses for every transaction and not farmers for using Qualix, is creating waves. This will be the go-to model for building more sustainable impact in the farm sector. I'm glad that I didn't start a typical supply chain agriculture startup. These incredible technological developments may not have happened if I had subsumed myself in the trade business," he says.

WhatsApp alternatives that you can use

"WhatsApp's new data rules have rubbed people the wrong way"

WhatsApp's new data privacy rules have rubbed many people the wrong way. As per the new policy as revealed by WhatsApp, it wil be hsaring its user data with not only Facebook, its parent company, but also other companies owned by Facebook. At a time when there is much scrutiny over the way user data has been handled by companies, WhatsApp's new data policy has angered many, with some even looking at options outside of WhatsApp for instant messaging purposes. Here is a look at some of the alternatives to WhatsApp that are out there.

Telegram

Arguably the best like-like app to WhatsApp out there, Telegram has been growing popular in the last few months. It is a freeware, cross-platform, cloud-based instant messaging, vdeo calling and VoIP software. It was launched in 2013 by two Russian brothers – Nikolai Durov and Pavel Durov. The most popular feature of Telegram is its 'Secret Chat' mode which is made possible by the service's end-to-end encryption under Telegram's MTProto messaging protocol, which nations worldwide have failed to crack.

Viber

Viber has been around for quite some time and is also more popular that Telegram. Operated by Japanese MNC Rakuten, Viber is a free app that has user concentration in certain regions like Europe and the MENA (Middle East and North Africa) region. Viber also allows end-to-end encryption. Started in 2020, Viber celebrated its 10-year anniversary three wekks ago.

Signal

Signal is also a free, simple to use app which is available on all major platforms. But unlike, WhatsApp and Telegram, Signal users open-source encryption, which means security developers can test it for flawas and find bugs. It lacks the glam of WhatsApp and Telegram but makes of for it in tierms of the security that it provides. Of all major messaging apps, Signal is the arguably the msot secure. Elon Musk had urged his followers to use the messaging app couple of days ago. This also resulted in many buying stocks of another company Signal advance which saw its shares shoot up 12-fold in two days!

WeChat

WeChat is a very popular app among over 1.3 billion people in the world. That is primarily because it is the go-to messaging app in China. Its user interface is similar to that of WhatsApp. But considering the amount of data privacy questions asked of apps owned by Chinese companies, WeChat may not be the first option for many who are on the lookout for a WhatsApp alternative.

Kik

Kik is an instant messaging software that has been around for quite some time. It does not require your phone number to register. It requires an email and uses your phone for storing chats. Once you switch phones, you lose the chats. It is a feature that has worked for and against the app. It is also one of the most secure and private apps out there. The app however has had its share of bad reputation due to the huge influx of bots in the app and the fact that it was used for drug dealing and other illegal activities.

Webinar by Mr. Uday Kiran on
"Machine Learning: Getting Started and Trends"

Keshav Shrivastav(IEEE UCoE webmaster and Event Report Lead)

IEEE UCoE along with WIE conducted a webinar on 26 November, 2020. The learning and discussion session was conducted by Mr. Uday Kiran and was attended by more than 50 participants from various student branches of India.
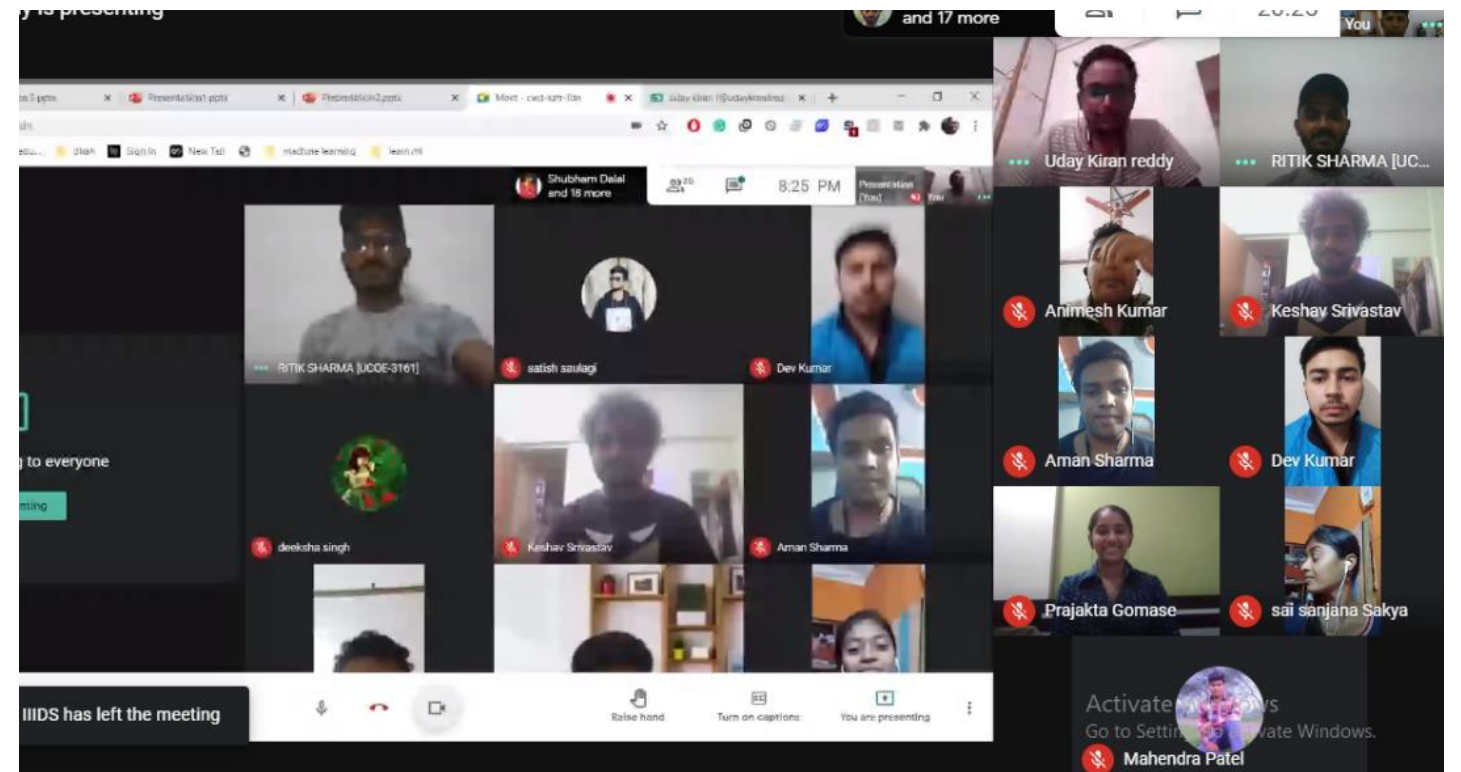
Mr. Kiran is the founder of "Learn Machine Learning" organisation. He has an achieved impressive feat of garnering loyal followers on Instagram for his organisation. Being a ML engineer at "Dhan AI" he has gained a lot of experience and knowledge which he, despite his busy schedule, is passionate on sharing with others through his organisation. Along with the before mentioned roles and ventures, Mr. Kiran has yet one more crucial responsibility which is that of Research Associate at "MUST Research Academy".

The session started as scheduled which began at 07:00 pm. However because of Mr. Kian's engaging and inspiring session and participants' curiosity the webinar ended long after its scheduled duration of one hour. Participants joined at a regular pace throughout the progression of the webinar. The session began with an introduction of Mr. Kiran by IEEE Xtreme Representative, Mr. Jatin Gohil. After the introduction was over Mr. Kiran took charge of the session. He began by introducing nuances of ML algorithms and applications. Mr. Kiran is an excellent speaker who keeps his audience captivated. This could be justified because not even 20 minutes had passed since the session began and questions from participants started flooding in the chat. Mr. Kiran addressed as many as he could then went on ahead with the session.

The session could be stated as a goldmine for the students and professionals. The knowledge shared by Mr. Kiran in this webinar was of utmost exclusiveness. This knowledge came from his vast experience and uncanny expertise. He spoke on various aspects of Machine Learning such as what to keep in mind while working with an algorithm, what are different platforms to work with, what are different types of Learning, what projects could be worked on to start with ML, how to start with Artificial Learning, how to work with datasets, and many more. Even while explaining, Dr. engaged participants' questions to some extent keeping time constraints in mind.

For the one and half hours that Mr. Kiran spoke, participants' curiosity increased exponentially which resulted in a flood of questions by them. And therefore for another half hour, Dr. Samanta answered those questions and entertained opinions and doubts on MI projects. These questions were laid out to him by IEEE UCOE President, Mr. Ritik, on behalf of the participants. However, like all good things that come to end, this goldmine of a session was near its end. After participants were satisfied with their questions answered, they expressed their wish to connect Mr. Kiran for future prospects. He was kind enough to share his contact details and assured everyone in the webinar that he will entertain their queries and requests and so not to hesitate to contact him.

The session was deemed as a huge success by Mr. Kiran and participants alike. IEEE UCoE, WIE, and IEEE student branch counselor Ms. Hezal Lopes were celebrated to organize this session. The webinar ended with a vote of thanks by IEEE UCoE member, Ms. Prajakta Gomase. The feedback received from the participants was exceptionally positive and many expressed a desire to attend further such events.

Faculties Achievement

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CERTIFICATE
OF PARTICIPATION

THIS IS TO CERTIFY THAT Dr. Jitendra Saturwar

ATTENDED THE GuruCool Program (6 Days Training on Emerging Technologies followed by a Project Build-a-Thon)

CONDUCTED BY IBM INDIA UNIVERSITY RELATIONS.

Mona Bharadwaj
Head of University Relations,
IBM India

Date: September 2020 - October 2020

Out Head Of Department, Prof. Jitendra Saturwar attended 6 Days Training program on "Projects on emerging technologies".

Prof. Hezal Lopes attended 10 Hours of Faculty Development Program on "Creative Thinking (Online Live FDP)" conducted by ICT Academy on 28 Dec 2020 to 02 Jan 2021

Prof. Sridhar Iyer attended 12 Hours of Faculty Development Program on "Flutter UI Design (Online Live FDP)" conducted by ICT Academy on 21 Dec 2020 to 26 Dec 2020

Prof. Sharvari Patil attended 12 Hours of Faculty Development Program on "Flutter UI Design (Online Live FDP)" conducted by ICT Academy on 21 Dec 2020 to 26 Dec 2020

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You can send your articles to the following email ids:

sridhar.iyer@universal.edu.in, hezal.lopes@universal.edu.in , apurva.chaudhari@universal.edu.in