



UNIVERSAL

Vidya Vikas Education Trust's

Universal College of Engineering

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Accredited with 'B+' grade by NAAC | Recognised as Linguistic (Gujarati)
Minority Institution

Issue No. 22
May 2020

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.

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Prepared by:

MR. SRIDHAR IYER

MRS. HEZAL LOPES

MS. APURVA CHAUDHARI

In Association with



(Computer Engineering Student Association)

A grand salute to our Corona Warriors

The Department of Computer Engineering proudly salutes and acknowledges the commitment and dedication of each of the true warriors of humanity who are working day and night for the well being of fellow human beings by giving their best in every way possible. We would like to thank some of those "**Heroes without Capes**" for their effortless service to mankind.

1: Mr. Yogesh Patil

He is a member of the Flying squad for providing food and other essential services to needy families who cannot afford due to the lockdown. He is the better half of our faculty **Dr. Dipti Patil**



2. Ms. Tehseen Sharif Khan

She is one of those God sent people who are serving our fellow citizens in person by interacting with them daily on a personal basis and risking even their lives in the process. She is sister of one of our students **Khan Aqueel Alam Sharif**



3. Ms. Twinkel Patel

The Doctors won't be able to work alone all the time single-handedly. They need the assistance of well skilled nurses, and assistants. A big salute to those nurses who have never left their doctors' side even once during this pandemic. She is a relative of our student **Ms. Dhvani Tank.**



4. Our Police Personnel



We salute our **POLICE** Department for their never ending commitment and efforts during this nationwide lockdown, without whom it would never have been a task to be even thought of completing in our distant dreams.



Mr. Sunil Sing Pawar
(Uncle of Ms. Khushboo Gogri)



Mr. Arvind Jagdale
(Father of Mr. Aomkar Jagdale)



Mr. Sushant Dhumal
(Brother of Prof. Vishakha Shelke)

5. Our **HIDDEN** Heroes

These are the people whom we often don't consider as heroes in normal scenarios but trust me they are the ones helping you burn the fuel at home for cooking, providing you groceries to stock up till the lockdown ends, providing you with medicines and essential toiletries to stay hygienic and fight out other diseases, government employees who are still working continuously amidst the lockdown and also a special mention to those heroes who are working from home as teachers to keep the students charged up and focused on studies.



Mr. Ritesh Satra
Essential Services,
Father of Harsh Satra



Mrs. Ketki Satra
Essential Services,
Mother of Harsh Satra



Mrs. Snehalata Kadam
Primary teacher, working in
containment zone at Satara
to maintain health record
Sister of Prof. Vishakha Shelke



Mrs. Suvarna Amol Athanikar
Working as an LIC Officer,
Mother of Mr. Amit Athanikar

Mr. Chandrakant Sathe
Supervisor in Ramkrishna mission
Hospital
Father of Manish Chandrakant Sathe



UCOE Official Mobile App



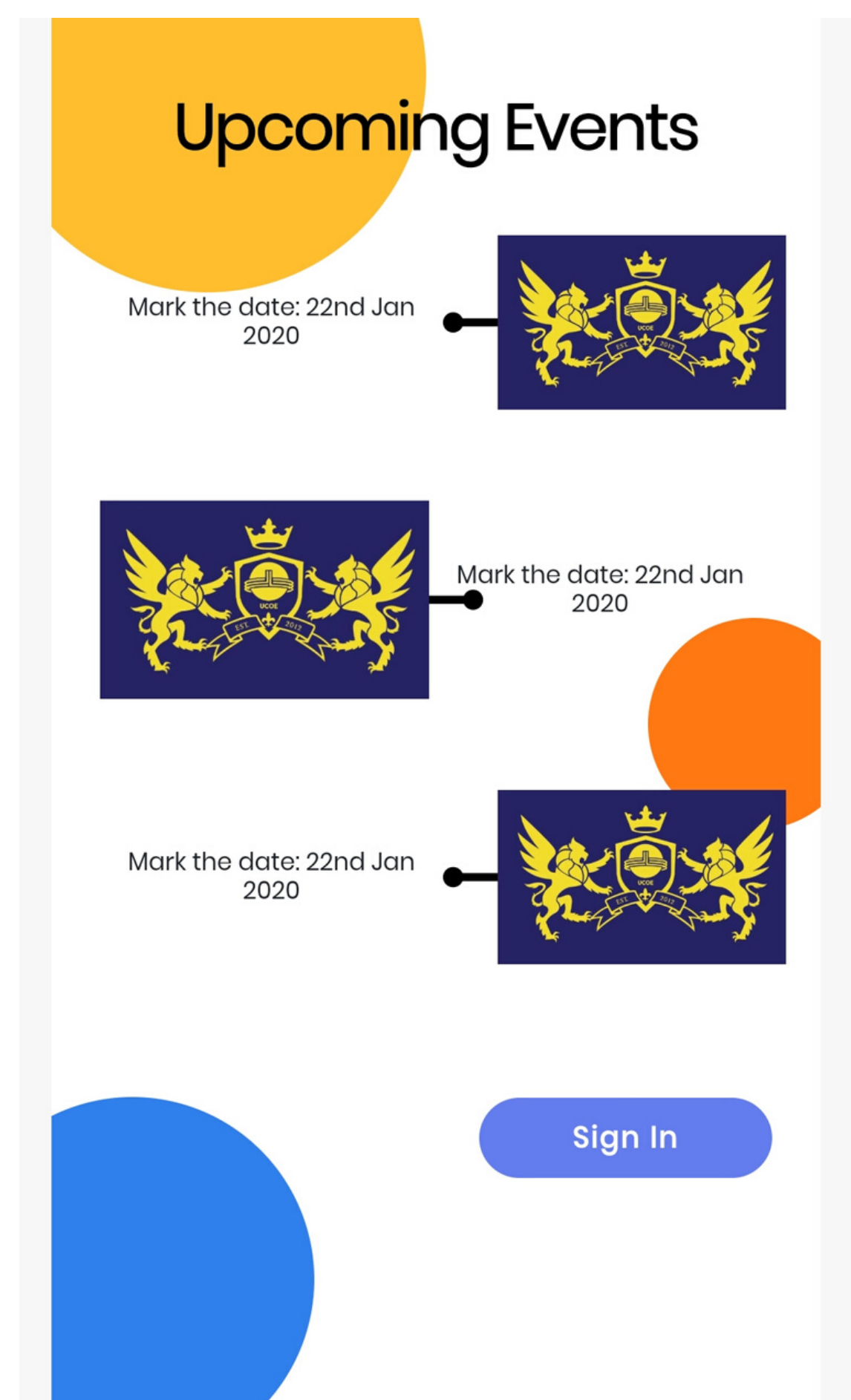
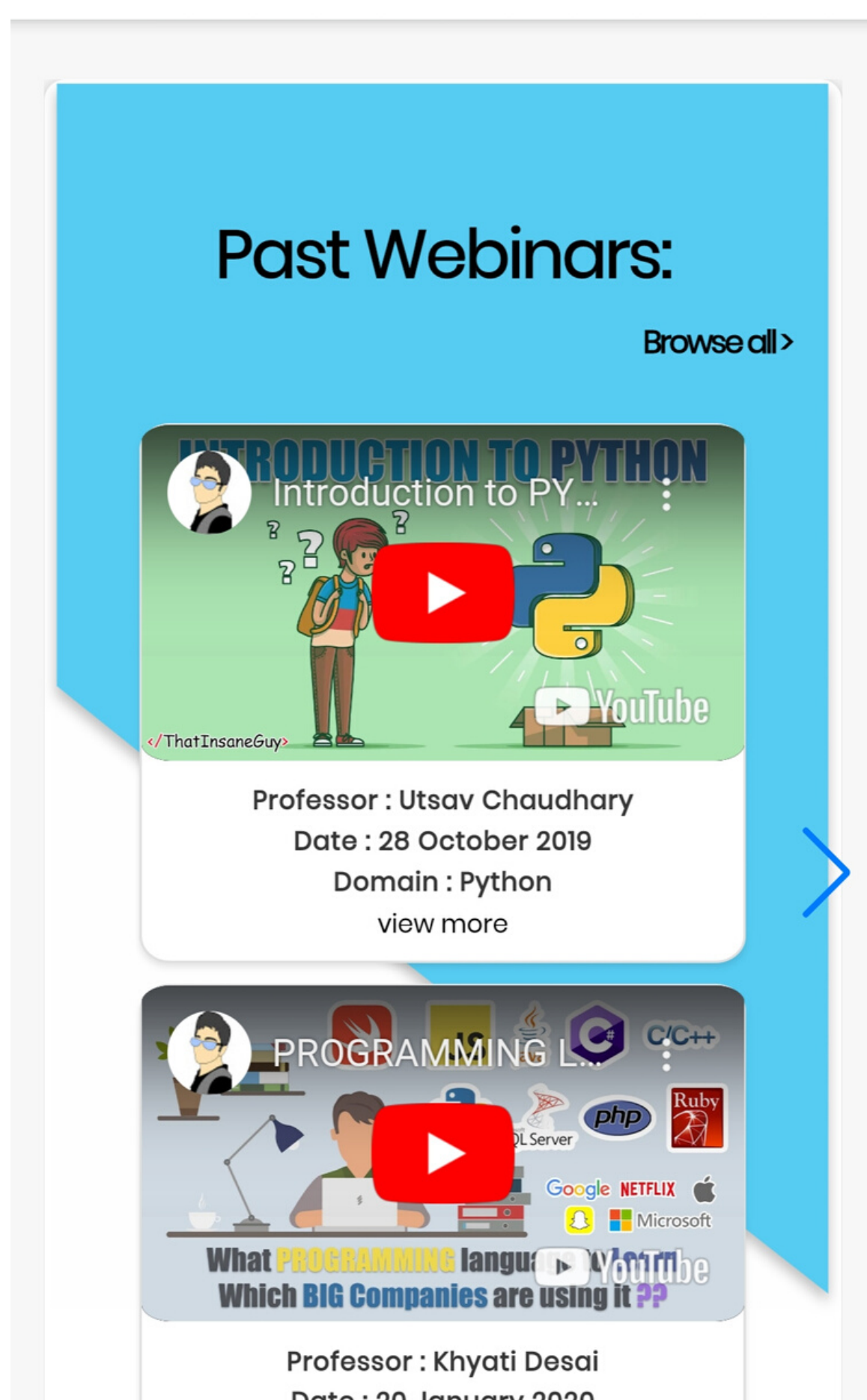
Our Third Year Computer Engineering Students, Mr. Shubham Shirke, Mr. Utsav Chaudhary, Ms. Khyati Desai and Mr. Amit Luhar , under the supervision of our Faculty Members, Dr. Ekta Upadhyay, Mr. Sridhar Iyer and Mrs. Sharvari Patil are working on an official College App, which has started leaping towards its Beta version to be deployed soon for limited public testing.

The main objectives of the app is to make it easier for our existing students to get a grasp of all the events happening in our college, get timely updates in the form of notifications, allowing students to register for various events organised by the college from time to time or attend online courses and webinars through the app.

The app will also feature an integration of another capstone project of UCOE , our very own Chatbot developed by a team of Information Technology students guided by Prof. Jigar Chauhan.

Along with these features for the existing students, the app will also cater to the needs of our prospective students by guiding them about the various disciplines of Engineering with the help of self curated video lectures and webinars. This will not only allow the students to make up their mind about which descipline to opt for but also help them deciding a career path for them.

Few snapshots of the Mobile App designed so far :



Blueprint of 5 Day Faculty Development Program on Python 3.4.3



By the time you would be reading this , the Department of Computer Engineering, UCOE in association with IIT Bombay and Spoken Tutorials would have successfully organized a 5 Day Faculty Development Program on "PYTHON 3.4.3". A total of 178 participants have registered for the 5 Day program scheduled from **4th May to 8th May 2020**. Many of the participants who have registered for the program belong to multiple disciplines and have shown eagerness to learn more about such open source programming languages so as to adopt them in the rapidly evolving and multifaceted needs of the industry.

Python is one of the leading programming languages when we talk about Data Science. closely followed by R Programming. We are planning to conduct a program for R Programming too in the future. The program consists of the following topics:

1. Basics of Python , Creating and drawing Plots
2. Subplots, Multiple plots and Saving Data Frames
3. Plotting Scatter Plots and Charts
4. Lists, tuples and Strings
5. Arrays, Images and Matrix Operations
6. Conditional Statements, Loops and Dictionaries
7. Sets, Functions and Scripts
8. Exception Handling

We got tremendous response for participation but keeping in mind the bandwidth issues, smooth conduction of the event and other technical aspects we have scheduled such programs in batches.

The Faculty Development Program organizing committee is coordinated by Dr. Dipti Patil.

The team comprises of:

Faculty Coordinator: Dr. Dipti Patil

Team Members:

Mrs. Hezal Lopes , Mr. John Kenny , Mr. Sridhar Iyer , Mrs. Silviya D'Monte

Mr. Ravi Nagar , Ms. Apurva Chaudhari , Mrs. Dhvani Barot

Student Achievements



Let us see how our students have countered the Quarantine by being sensible citizens and utilizing the time in upgrading their skill sets. Lets identify some of them.

Sr. No.	Name of Student	Course
1	Gunjan Bharat Mehta	• Android Development by Programming Hub
		• Hacking by Programming Hub
		• Data Science by Programming Hub
		• Python3 by Programming Hub
		• Kotlin Programming by Programming Hub
		• Social Media Marketing by Programming Hub
		• Search Engine Optimization by Programming Hub
2	BHARAT JAYANTILAL NISAR	• How Google does Machine learning by Google Cloud Training.
3	Sanket magodia	• Machine learning with data science, Tensorflow, artificial intelligence, and neural networks by udemy
		• Video basics with openCv using python on Coursera
4	Imran Ali Mohammed Ali Khan	• Programming for everybody(getting started with Python) by coursera (University of Michigan)
5	Isha Dipesh Prajapati	• Introduction to data science in python by Coursera
6	Kaushal Harshad Thakar	• Python by Guvi.in PCAP - Programming Essentials in Python by Cisco
7	Kajal Jagdish Maurya	• Excel Skills for Business: Essential by MACQUARIE University
8	Mihir Bharat Gohil	• Knockdown the Lockdown by TCS ION
9	Tanvi Pravin Ambre	• Google Cloud Platform Fundamentals: Core Infrastructure by Coursera
10	Divesh Manish Koli	• Software Processes and Agile Practices by University of Alberta - Coursera

Sr. No.	Name of Student	Course
10	Divesh Manish Koli	• Clients Needs and Software Requirements by University of Alberta – Coursera
		• CareerEdge by Tata Consultancy Services
		• Foundation of Business Strategy by University of Virginia – Coursera
11	Mohd Faizal Mohd Yunus	• "Basic Sentiment Analysis with TensorFlow" by Coursera
12	Rutvik Vijaykumar Joshi	• Tensorflow by Deeplearning.ai
13	Ashutosh Manoj Mishra	• Developing Applications with Google Cloud Platform - Specialization - By Google on coursera
14	Yashodhan Mehta	• Python for everybody :Data Structures by coursera and
15	Akash Rajesh Bhimani	• Introduction to Structured Query Language (SQL) by University of Michigan
		• SQL for Data Science by UC Davis
		• Programming for Everybody (Getting Started with Python) by University of Michigan
		• Python Data Structures by University of Michigan
		• Using Python to Access Web Data by University of Michigan
		• Capstone: Retrieving, Processing, and Visualizing Data with Python (Honors) by University of Michigan
		• Using Databases with Python by University of Michigan
		• Introduction to Git and GitHub by Google
		• Introduction to Data Science in Python by University of Michigan
16	Archit Anil Nangalia	• Machine Learning for All by Coursera.
17	Mohammad Tanweer Ahmed	• Course : Zero 2 Hero Python course provided by Lets Upgrade in association with Skill India, National Skill Development Corporation, ITM Edutech Training
		• Basic Image Classification with TensorFlow provided by Coursera

Some of them also got their research papers published in reputed Scopus Indexed, UGC Care Journals.

Sr. No.	Name of Student	Publication
1	Dwivedi Saurav Rajendra	Exam Cell Automation System , published in IOSR Journal
2	Pradeep Mistry	Image Forgery Detection, published in Sustainable Humanosphere Journal
3	Mihir Gohil	Application Development using Image Processing, published in Sustainable Humanosphere Journal
4	Aditya Amardeep Ajgaokar	A Novel Approach for Invoice Text Detection and Recognition published in Journal of Emerging Technologies and Innovative Research (JETIR)
5	Gouri Suresh Nair	Criminal Investigation Tracker and Suspect Prediction published in Journal of Emerging Technologies and Innovative Research (JETIR)
6	Yashodhan Mehta	Blockchain Based Supply and Delivery of Subsidized Goods/Schemes published in Journal of Emerging Technologies and Innovative Research
7	Sandeep Suresh Kumar	Sketch to Image Translation with Generative Adversarial Networks published in Journal of Emerging Technologies and Innovative Research(JETIR)
8	Mohammad Tanweer Ahmed	Blockchain Based Supply and Delivery of Subsidized Goods/Schemes published in Journal of Emerging Technologies and Innovative Research

Congratulations



Faculty Achievements

Our Faculty members are always keen on improving their knowledge and constantly upgrade their skill set. Lets begin discussing our faculty achievements with **Mrs. Silviya D'Monte**.

The University of Mumbai invites research proposals each year for the grant of MINOR RESEARCH PROJECTS. The best projects are selected each year for which the University of Mumbai helps monetarily to support the project.

This year , our Faculty Mrs. Silviya D'Monte has been granted the Minor Research Project for her project idea titled "Crop Monitoring System"

Crop Monitoring System:

An application which helps farmers to take appropriate decisions in real world about which crop is suitable to grow for type of land and which can be predicted based on parameters like moisture, temperature using **random forest algorithm** and **decision tree**. It also includes IOT based method for the detection of weeds using **Convolutional Neural Network(CNN)** in specific site of crops.



Faculty Publications

Sr.No.	Name of Faculty	Papers Published
1	Dr. Jitendra Saturwar	"Augmented Reality to Study Human Anatomy", International Journal of Science and Research (IJSR) ISSN: 2319-7064 ResearchGate Impact Factor (2018): 0.28 SJIF (2018): 7.426
		"Sketch to Image Translation with Generative Adversarial Networks", Journal of emerging technologies and innovative research,UGC Approved (Journal No: 63975) Published in Volume 7 Issue 4 , April-2020 Date of Publication: 2020-04-30
		"Voice Input based Attendance System", International Journal of Recent Technology and Engineering (IJRTE) ISSN: 2277-3878, Volume-9 Issue-1, May 2020
2	Dr. Dipti Patil	"Blockchain based Land Mining Records", Published in Studies in Indian Place Names with ISSN no. 2394-3114, Vol. 40 Issue 35, Month February 2020
		"Interactive Android-based Vehicle Parking System using QR-code", published in Studies in Indian Place Names with ISSN no. 2394-3114, Vol. 40 Issue 35, Month February 2020
		"ONLINE PORTAL FOR ISSUING DRIVING LICENSE WITH MOCK TEST SERIES" Studies in Indian Place Names with ISSN no. 2394-3114, Vol: 40 issue: 35
3	Mrs. Hezal Lopes	"Crowdfunding Application Deployed on Blockchain with Smart Contracts" published IJRAR, Volume 7, Issue 2, April 2020
		"Secure Banking using QR Code and OTP" published in Studies in Indian Place Names with ISSN no. 2394-3114, Vol. 40, Issue 35, Month February 2020
4	Mrs. Kanchan Dabre	"Fake News Detection", International Journal Of Research And Analytical Reviews, Vol 7 Issue 1, March 2020.
		"Fabric Texture Analysis Using Image Processing Techniques", International Journal of Emerging Technologies and Innovative Research (www.jetir.org), ISSN:2349-5162, Vol.7, Issue 3, page no.392-397, March-2020
		"Online Social Grievance Redressal Using Blockchain", International Journal Of Emerging Technologies and Research, Vol 7 Issue 3, March 2020
		"Online Social Grievance Redressal Using Blockchain", International Journal of Emerging Technologies and Innovative Research (www.jetir.org), ISSN:2349-5162, Vol.7, Issue 3, page no.215-219, March-2020

Faculty Publications (cont.)

Sr.No.	Name of Faculty	Papers Published
5	Mrs. Vishakha Shelke	"Stock Market Prediction" published in JETIR, Volume 7 Issue 4, April 2020
		"Proautomation: An Efficient Student Project Planning and Tracking System" published in Sustainable Humanosphere Journal, Volume 16, Issue 1, March 2020
6	Mr. John Kenny	"Developing Interactive Chatbot using Artificial Intelligence Markup Language " published in
7	Mr. Sridhar Iyer	"Intelligent Traffic Management System for Prioritizing Emergency Vehicles in Smart Cities", Study of Indian Place Names, UGC Care Journal, Volume 40, Issue 35, ISSN: 2394-3114
		"Robust and Secure Video Steganography for Military Communication", Study of Indian Place Names, UGC Care Journal, Volume 40, Issue 35, ISSN: 2394-3114
		"Automated System Defence Using Machine Learning", Study of Indian Place Names UGC Care Journal, Volume 40, Issue 35, ISSN: 2394-3114
		"Blockchain Based Certificate Validation", Study of Indian Place Names, UGC Care Journal, Volume 40, Issue 35, ISSN: 2394-3114
8	Mrs. Sharvari Chorghe	"Online Grievance Redressal Portal" published in Studies n Indian Place Names with ISSN No. 2394-3114, Vol 40 Issue 35, Month: February 2020
9	Mr. Chinmay Raut	"Smart Health-Integrating Technology with Current Practices" published in IJRAR, Volume 7 Issue 1, March 2020
		"Exam Cell Automation System" published in International Organization of Scientific Research
10	Mrs. Silviya D'monte	"Crop Monitoring System" published in IJSRD, Volume 8, Issue 1 in March 2020
11	Mrs. Ankita Kadu	"A Novel Approach for Invoice Text Detection and Recognition" published in JETIR, Volume 7, Issue 1, April 2020
		"Business Analytics for MSME E-Commerce Website" published in JETIR, Vol.7, Issue 5, May 2020
12	Ms. Apurva Chaudhari	"Digitalization of Cable TV Subscription" paper published in IJESC, Volume 10, Issue 4, April 2020
		"Performance Analysis of Data Compression on Multimedia" paper published in IJRAR, Volume 7, Issue 1, March 2020
13	Mr. Ravi Nagar	"Application Development using Image Processing" paper published at 'Sustainable Humanosphere' UGC CARE Journal
		"Image Forgery Detection" paper published at 'Sustainable Humanosphere' UGC CARE Journal
14	Mrs. Dhwani Barot	"Exam Automation" published in IJRAR, Vol 7, Issue 2, April 2020
15	Mrs. Ancy Gonsalves	"A Practical Machine Learning Framework for Cyber Security System" published in in Studies in Indian Place Names with ISSN no. 2394-3114, Vol. 40 Issue 32, Month February 2020
		"Reel Mumbai using Augmented Reality" published in Studies in Indian Place Names with ISSN no. 2394-3114, Vol. 40 Issue 32, Month February 2020
16	Mrs. Poonam Thakre	"Uplifting Farmers through connected ecosystem" published in IJRAR, Volume 7, Issue 2, April 2020

Faculty Development Programs Attended

Sr.No.	Name of Faculty	FDP's Attended
1	Mrs. Hezal Lopes	2 day FDP on AI and ML organised by Finland labs on 23rd and 24th April 2020
2	Mr. Sridhar Iyer	FDP on "Cyber Attacks" by Indian Servers
		FDP on "Cyber Forensics" by Indian Servers
		FDP on "Blockchain" organised by JNTUA in association with AICTE - ATAL
		FDP on "R Programming" organised by PVPPCOE in association with IIT Bombay , Spoken Tutorial
		FDP on "Machine Learning" by Indian Servers
3	Mrs. Sharvari Patil	FDP on "Drupal" organised by AISSMS in association with IIT Bombay Spoken-Tutorial
4	Mr. Ravi Nagar	"One Week FDP on DRUPAL" at AISSMS IOIT, PUNE in association with Spoken Tutorial from 20/04/2020 to 27/04/2020
5	Mrs. Poonam Thakre	3 Days Workshop on Education 4.0 organised by Atharava college of engineering from 28/4/2020 to 30/4/2020

Webinars Attended



Sr.No.	Name of Faculty	Webinars Attended
1	Mrs. Hezal Lopes	Online Workshop on Natural Language Procesing (Text Classification)- 19/04/2020
2	Mrs. Kanchan Dabre	Leadership talk with Mr.Yashraj Pal (Co-Founder Zenith Vipers & ensures Quality) by MHRD innovation Cell on 20th april 2020
		Webinar on Gender Sensitization in globalization by langlit on 21st April 2020
		Webinar on "Online Teaching Learning System " IPOD on 30th April 2020
3	Mrs. Vishakha Shelke	Online Workshop on Natural Language Procesing (Text Classification)- 19/04/2020
		Webinar on Online Teaching Masterclass-Teachers Exclusive - 25/04/2020
		Webinar on Teaching-Learning and Online Assessment Platform -29/04/2020
4	Mr. John Kenny	Webinar on NAAC conducted by Wilson College
		Webinar on Teaching-Learning and Online Assessment Platform -29/04/2020
5	Mr. Sridhar Iyer	Webinar on Online Teaching -Learning and Online Assessment Platform – 29/04/2020
		Webinar on Python Django Framework – 30/04/2020
6	Mrs. Sharvari Chorghe	Webinar on Online Teaching -Learning and Online Assessment Platform
7	Mr. Chinmay Raut	Webinar in Machine learning hosted by IETE Mumbai associated with PANTECH Solution
		Webinar on Accreditation Management Demo by impod-Ed-Tech
		Webinar on Introduction to Intellectual Property by British Library.
		Webinar on Live demo: How to conduct your examinations online by Marcer Mettl
		Webinar on Block chain by Thadoal Shahani College of Engineering
		Webinar on Online Assessment Portal by Calyxpod
8	Mrs. Silviya D'monte	Webinar on Teaching-Learning and Online Assessment Platform -29/04/2020
9	Ms. Apurva Chaudhari	Faculty Development Webinar Series on "Developing Thinking Abilities Relevant for Engineering Education" by FACE & THINQ on 28th April 2020
		Webinar on " Online Teaching-Learning & Online Assessment Demo " by Inpods Ed-Tech on 30th April 2020
		Online workshop on "Education 4.0 by IQAC", Atharva College of Engineering on 28th -30th April 2020
10	Mrs. Poonam Thakre	Online Workshop on Natural Language Procesing (Text Classification)- 19/04/2020
		Live session on Entrepreneurship organised by MUCTA-11/04/2020
		Live session on Entrepreneurship organised by NPTEL -20/4/2020
		Three days workshop on Education 4 organized by Atharva coleege of engineering from 28th Apr 2020 to 30th Apr 2020.
		"Natural Language Processing" one day workshop organized by techtrunk on 19th April 2020.

Certification Courses Completed



Sr.No.	Name of Faculty	Certifications Completed
1	Mr. Sridhar Iyer	Coursera Certification on "Data Science Toolkit"
		Coursera Certification on "R Programming"
		Certified Ethical Hacker (CEH) Certification (Version Upgrade) by EC Council USA
		Test Completion Certificate on "Python 3.4.3" in Association with IIT Bombay, Spoken Tutorials
		Test Completion Certificate on "R Programming" in Association with IIT Bombay, Spoken Tutorials
2	Mrs. Sharvari Patil	"R Programming for Data Science with Real Exercises" by Udemy
3	Ms. Apurva Chaudhari	"Introduction to Data & Data Science" by 365DataScience
		"Introduction to Python" by 365DataScience

Webinar Conducted by Inpods



Mr. Ajay Bhagwat , Director of **Inpods** India conducted the webinar focusing on the topic “Online Teaching - Learning Online Assessment platform and Accreditation Management System”. Online teaching is presently being used by many institutions during this period of COVID-19 pandemic situation. Inpods provides learning solutions to progressive Higher Education institutes to improve Academic Quality software solution for many academic works as per the requirement of different management accreditation including NAAC, NBA. Faculties of Department of Computer Engineering who are working for different NAAC criteria attended the webinar.

Webinar Topic	Name of Faculty
Learning & Online Assessment Platform	Mrs. Vishakha Shelke, Mr. John Kenny, Mrs. Sharvari Patil
Online Teaching-Learning & Online assessment Demo	Mr. Sridhar Iyer, Mrs. Kanchan Dabre, Mrs. Silviya D'Monte, Ms. Apurva Chaudhari
Accreditation Management System Demo	Mr. Chinmay Raut



Webinar Conducted by TechTrunk



TechTrunk Ventures Pvt. Ltd conducted an "**Online Workshop on Natural Language Processing**" on 19th April, 2020 from 4pm to 7 pm. Mrs. Hezal Lopes, Mrs. Vishakha Shelke and Mrs. Poonam Thakre attended this workshop. The Following topics were covered in this workshop:

Agenda of Workshop-

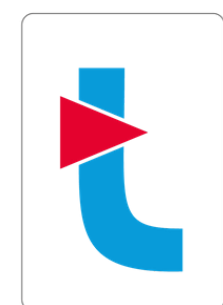
Section 1 – Text Preprocessing

1. Cleaning text data using regular expression
2. Tokenization
3. Lemmatization



Section 2 – Text Vectorization

1. Frequency-based Vectorization
2. Count Vectorization
3. TFIDF



Tech Trunk

Section 3 – Text Classification – Hands on Work

1. Email Classification
2. Using naive Bayes classification

Project Based Learning



The Computer Engineering Department has implemented Quality Initiative **“Project Based Learning”** in academic year 2019-20. Under the guidance of Dr .Jitendra Saturwar, Head of Computer Engineering Department **Mrs. Vishakha Shelke** , **Mr. Chinmay Raut** coordinated this initiative.

Mr. Ravi Nagar provided the technical assistance and support to all the projects during lockdown period. Project based learning is the skill development program for students where students have developed projects useful for college automation by applying their technical knowledge.

Learning Outcome of PBL skill development program :

Students were able to

1. Understand and develop solutions of problem statement
2. Design User interface for Project
3. Implemented the projects with different programming languages like JAVA, Python, HTML, XML, PHP, Android, Asp.ne
4. Understand various domains like IOT, Security, Network, Database etc.

Here is the list provided projects developed in even semester of academic year 2019-20:

Sr No	Student Name	Project Topic
1	Priyal Vyas	Stationary Distribution Management
	Sayalee Patil	
2	Isha Prajapati	Faculty Leave Management
	Vunda Patel	
	Shreya Patil	
3	Harsh Patel	Design IAT Question Paper using Bloom's Texonomy Level
	Mihir Parmar	
	Tanuj Patel	
4	Janvi Shree Shrimal	IQAC Activity Report Automation
	Pragati Tiwari	
	Pallavi Pawar	
5	Ateeba Javed	Student Internship Portal
	Aneesha Jaykumar	
	Yashi Jain	
6	Meet Turakhia	Alumini Portal
	Parth Chudasama	
	Vinay shah	
	Karandeep Padam	
7	DeepSingh Bhamra	Professional Development Portal NAAC CR-6
	Arvind Choudhary	
	Sharan Sukesh	
8	Jay Prajapat	Library Management with Notification
	Manish Sathe	
	Harsh Ratnani	

Sr No	Student Name	Project Topic
9	Baljit Thakur	Web developement
	Krushil Sheladiya	
	Nayan Siddhapura	
	Kushal S.	
10	Rutvik Joshi	StealthMask
	Harmish Gothi	
	Ronak Jethava	
	Jay Panchal	
11	Yash Kumawat	Faculty Publication Portal
	Anuj Jadhav	
	Jainam Shah	
12	Mokshit Trivedi	Project Based learning Management System
	Dhruv Seth	
	Aakruti Patel	
	Shreena Vachhani	
13	Sakshi Parikh	Organic Farming Management Portal
	Dhruv Desai	
	Chauhan Hrithik	
14	Tanvi Dhumal	Employee salary management
	Riddhi Siddhpura	

How to scrape Google for Images to train your Machine Learning classifiers on

.....

One of the most tedious parts of training an image classifier or working on any computer vision project is actually gathering the images that you'll be training your model on. In this article, I'll guide you through a simple process for gathering and filtering your training images very quickly. Keep in mind that you don't need to follow my process exactly; there are many alternative tools that may be able to do the same job but this is how I go about things, at least on my own Windows laptop. This also assume that you have the Fast.ai v1.0 library installed as well.

Step 1: Scrape Google Images

Here are the detailed steps, as per Fast.ai and Pyimagesearch: Disable your Ad-Blockers!! Search for images in Google Images using Chrome (haven't tested this in Firefox or other browsers.) Scroll down until there are no more images. You may need to click on the dialogues a few times to get even more images. Use Ctrl-Shift-J to open the Console. Invoke the following command:

```
urls = Array.from(document.querySelectorAll('.rg_di
.rg_meta')).map(el=>JSON.parse(el.textContent).ou);window.open('data:text/csv;charset=utf-8,' +
escape(urls.join('\n')));
```

A list of URLs for the images will be downloaded into a file named "download" in your default Downloads folder.

Step 2: Remove Duplicates

Once you've combined all of your images in a single folder, you'll want to remove duplicates. You can use a Python script if you like but I prefer Visipics.

Step 3: Use Machine Learning to do some final filtering

You'll want to create a 2-class image classifier (similar to the classic "Cats vs Dogs" one) that'll identify which images you want and which you don't.

Step 3b: Take a small subset of your images and use it to train an image classifier

Create a new folder and create two subfolders named "yes" and "no" in it. Then take the first 100 or so images from the folder containing your original dataset and move them into the respective subfolders (if you don't want that particular image, put it in the "no" folder, otherwise put it in the "yes" folder.) Depending on how complex your and imbalanced your image dataset is, you may need more or less than 100 total images for this stage.

Step 3c: begin training Use this Jupyter Notebook for training.

You'll need to set the path in the 2nd cell to the folder where you created and populated the "yes" and "no" folders in Step 3b. Make sure to save your model in the last cell once you're done training. Step 3d: Make predictions and automatically move images based on them Use this Jupyter Notebook for predicting. There are 3 different variables you'll need to set: mypath: The same path that you set in step 3c where you stored the training and test images. pred_path: The original folder containing all of the images you've downloaded from Google Images. dest_path: After your model makes predictions on the images in pred_path, this is where they'll be placed (within their respective subfolders based on the results from the model's prediction.)

Last Step: Make Final Adjustments

In a perfect world, your model will be 100% accurate when making predictions, but it's highly unlikely your model will be perfect (although it may come close.) You'll want go through the "yes" and "no" folders in your dest_path and move the mislabeled images into their correct folders. Once you're done with this step, you'll want to take the images out of the "yes" folders in both dest_path and mypath and use them in your machine learning or computer vision project!

Scan Me for our previous Editions



You can send your articles to the following email ids:

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