BS-FYPs (Fall-2021 - Spring-2022)

S. #	Short Title	FYP Title	FYP Highlights (Description)	Link to the FYP Report	Tools, Languages/ Technologies
1	F21-01-D-SeamZo	SeamZo	Blockchain based social media platform integrating nfts for the users posts. the user can buy sell or post any digital content.	https://drive.google.com/open?id=1KTWsGLu1Ma0QMPPPqHNZoX-xsJiiWO0-	JavaScirpt Fullstack (MERN), React Native, C, C++
2	F21-02-D-GoCart	Go-Cart	[Go-Cart] is an automated shopping cart with the aim to make shopping a hassle free and simple experience for both the consumer and the shop employees by utilizing a combination of IoT and AI. It will allow cashierless checkout using a collaboration of radio-frequency identification(RFID), barcode scanning and image recognition using deep learning, along with a cluster based specialized shopping recommendations system to provide artificially intelligent shopping assistance.	https://drive.google.com/open?id=1YoDJUpF96s39HvZ0MMuD2tB46CbHTOZB	Yolo , Python , MySql, React
3	F21-03-D-ARTS	AR based Tactical Simulator	Augmented Reality based tactical training simulator for special forces. The simulation includes two different teams in various scenarios. Team members will communicate with each other using call outs, tagging in 3d space, and can view the location of their allies. Each member is part of the virtual arena connected to a single lobby. A lobby can also have observers analyzing the performance of players. A player can see a 3D or 2D view of the arena through their device. AR mesh generation will enable team members to share their 3D views. The simulator will cover different types of scenarios like rescue operations, eliminate target and bomb disposal etc.	https://drive.google.com/open?id=1QdahONnvCPOrYojKOGQvPtJrp-Qq6FLe	C# .NET, Unity
4	F21-04-D-SmartSalah	Smart Salah	Activity recognition of prayer using smartwatch	https://drive.google.com/open?id=1mACjmcm3A2LMzCDdL6R8gdB0Edyfls1u	Android - JAVA, Python, JAVA, C, C++
5	F21-05-R-AutoKG	Automated Knowledge Graph Construction for Large Document Collections	- Convert source data from document collections either structured or unstructured into RDF - Design a Conceptual Model for the Knowledge Graph - Populate and Visualize the RDF Knowledge Graph - Publish the RDF as Linked Data - Link with Potential External Datasets/Open Knowledge Graphs - Query using SPARQL - Create end user web application to browse and visualize the Knowledge Graph based Document collections - Enable users to run complex queris in a user friendly manner	https://drive.google.com/open?id=19hdj41Eq8r-LRID-znbj7wXX3h531idR	Python, AWS Developement
6	F21-06-D-ClickFix	Fix your home accessories with single click	SmartFix is aimed to be a mobile application for smartly fixing your home appliances. It will provide accessibility and assistance to the people of Pakistan for finding laborers in their proximity with just a single click. It will also open up job opportunities for countless people all across the country. The application will be implemented using the concepts of Deep Learning and Computer Vision.	https://drive.google.com/file/d/1Ga9N_xkCAdSCy-b2odAKfIzn0t0Si9Db/view?usp=sharing	Python, Flutter (Hybrid)
7	F21-07-D-FastCricket	Digital Scoreboard and DRS for FAST cricket ground	Our first objective is to develop a digital score board for a cricket match similar to the one we see on our television screens. This digital board will provide information regarding the cricket match like team and player names, current/target score, wickets, overs etc. Our system will also show video feeds from different angles. Our second objective is to built a 3rd umpire system (DRS) for smart decision making regarding the match which will help in deciding runouts, no balls and bat edge. Our system will also calculate the speed of the ball.	https://drive.google.com/open?id=19QM-nlFbGpcZ82U5PmTF99U2PVgLwujN	Python, Django
8	F21-08-D-SocialMediaInvestigator	Twitter Trend Analysis	A smart Web Application which will analyse the twitter trends and determine the sentiment of the tweet, bot activity in a trend, origin of the trend and will help to neutralize the propaganda. There are group of political Twitter accounts, commonly referred to as political propaganda bots. We have seen cases where these accounts are re-tweeting falsified information. Furthermore, these accounts all seem to be part of the same networks of other political propaganda bots, which allow them to promote content very quickly to real humans on Twitter.	https://drive.google.com/open?id=1lasKet3jRgVerGNdSnSFjk9YAqbKhTs1	JavaScirpt Fullstack (MERN), Python
9	F21-09-D-IdeaMarket	Idea Market	We have the following propositions for this idea which are defined below: - The project is a repository of ideas and people can come and buy it. - In order to ensure that the product works, we will have a level of information shared. - There will be free ideas for your project as a hook - For some subscription x, you will be able to see some description of the idea. Only a selected part, like it is done on some sites where students' assignments are uploaded. You will be shown the architecture and technologies, the solution uses. - In order to buy the idea, you will have to talk to the owner. - On this site not just ideas are sold but also the solutions to some problems as well, which can also start the trend of collectibles in the algorithm domain. So, most students will then push themselves to make their own algorithms and post it here. So definitely having an impact on the research side and academia.	https://drive.google.com/open?id=1bi-LGLJZzQWyp2fEA8YUbw_aksNG8rAU	JavaScirpt Fullstack (MEAN), Python, Golang, MySQL
10	F21-10-D-ABRS	Business Automate insights	The main problem is that organization use excel sheets to store the data and they don't have any centralized system for storing the data. They need to use data for taking business decision and enhance their profit as much as possible. Other problem is that now a day's traditional ways are used such as Teradata and oracle. It requires millions of dollars to implement this and they use their own hardware and installation process. So technologies that we will be using are open source and we will be implementing on our laptop by increasing ram and it can be scaled up or down depending on the size of data. Then we will be using this concept to store their data in DWH/data Lake. Data Lake will be helping in storing vast amount of data giving a 360 view of their data to provide meaningful insights helping a business make decisions in order to be profitable.	https://drive.google.com/open?id=1TfbHliQFhKXsXWIF7uEAvW-cKMDOckFA	React Native, Microsoft SQL, Postgres, Cloudera, SQL, ETL, Hadoop, Hive, Impala, PowerBI
11	F21-11-D-DocExpress	DocExpress(Andriod) & Web Apps (Revised)	Tracking and searching of official documents using mobile devices	https://drive.google.com/open?id=17M8KFlcEk2UseySRHBDntOlC6NF574Rl	JavaScirpt Fullstack (MERN), Android - JAVA, PHP (Laravel/CodeIgnitor/Yii/Zend/Drupal), Oracle
12	F21-12-R-PlanteafX	Plant Disease Detection System	We will make an android app that will take pictures of leaves and process them using digital image processing and analyze it using deep learning and then detect either the plant has the disease or not and then tell which is it .	https://drive.google.com/open?id=1i-nFTB1eaZK70EnhpLjRNYjV2s7h6JBJ	Android - JAVA, Python, JAVA
13	F21-13-R-DeepPestDetector	Pest recognition using deep learning	The aim of the project is the recognition of crops pest using deep learning and image processing.	https://drive.google.com/file/d/1WLtGEpSP7Vp5JWXyALnrT2lXlNBXIw-c/view?usp=sharing	Python, IOS - Objective C & SWIFT
14	F21-14-D-Aniketos	Aniketos: System vulnerability detector	Aniketos will automatically scan the system and will identify the system's vulnerabilities. It will rate the security of the system on the basis of internal and external factors and will grade the security of the system.	https://drive.google.com/open?id=19d2nv7dNgO87_tqn6XVsM7IV5d-ZySD4	React JavaScript , Django (Python), MySQL
15	F21-15-D-Penetrato	Automated Penetration Testing	We will automate traditional penetration testing methodology which involves scanning, exploitation and report generation. Through this project we will not only save the the human involvement in the process but also the resources like time and money.	https://drive.google.com/open?id=1bVo_Ti6lEO9i1wU3qGFfGjS0P-d__BR7	JavaScirpt Fullstack (MERN), Python
16	F21-16-D-ThreatGator	ThreatGator	Cyber threat intelligence (CTI) is an area of cybersecurity that focuses on the collection and analysis of information about current and potential attacks that threaten the safety of an organization or its assets. Cyber threat intelligence sources include open source intelligence and social media intelligence. A Threat Intelligence Platform (TIP) is a technology solution that collects, aggregates and organizes threat intel data from multiple sources and formats. Our proposed TIP's features would include 1. Aggregation of intelligence from multiple sources 2. Curation, normalization, and enrichment of data 3. Filtration and prioritization of threats 4. Correlation based on IOCs in STIX format and their visualization	https://drive.google.com/open?id=1J4KaLPbOxHcW7mE1O70WL2FZQkMjWJj4	Python, JAVA, Microsoft SQL, Selenium, Redis/ ElasticSearch AWS, React Bootstrap, Kafka, Spring Boot
17	F21-17-D-ITD	Insider Threat Detection	The Insider Threat Detection system monitors the activities of an insider on a system. It will monitor different user activities including but not limited to application usage, data access/movement, IP tampering, privilege escalation etc. All the data regarding these activities will be sent and stored on a server where it can be analyzed. Furthermore, the monitoring application will be run under special conditions in which it cannot be detected or interfered with by the user whom it is monitoring.	https://drive.google.com/open?id=16JA4KNjBPxuR5fxOFLls02SDnheGs0vw	C# .NET, Reactjs, sqlite
18	F21-18-D-ADAPT	AD-APT - Artificially Determined Advanced Persistent Threats	AD-APT's main goal is to determine key characteristics related to the TTPs,IOCs and tools from varied APT sources by automatically crawling for information on a regular basis and classifying the sources as APT relevant using machine learning.	https://drive.google.com/open?id=1snHcm8UJLw0fxriJdVc6bWe8U2j5BEfx	JavaScirpt Fullstack (MERN), React Native, Python, Selenium
19	F21-19-R-TrueFace	AI Based Facial Recognition Authentication System With Anti Spoofing Capabilities	We intend to design a system that will take live video from a camera. A person will stand in front of the camera and the camera will recognize the person using facial recognition AI techniques. The system will also include anti spoofing methods such as check if the persons eye is blinking, check wether a video or picture of the person is being shown to the camera and use Anti-spoofing AI models such as AENet. There are already some Anti-spoofing datasets available on the internet. We hope to survey these multiple techniques and implement some as well and create a complete automated authentication system. Such a system can be used in a university or an organization for authentication purposes.	https://drive.google.com/open?id=1V9BZVogv0BCS_V3jimWQrUso_Cc1epd6	JavaScirpt Fullstack (MERN), Python, Microsoft SQL, Flask,pytorch
20	F21-20-R-KBCAgent	Knowledge-based Conversational Agent	Our project consists of an open-dialog language model like Google's Meena but considers factuality in addition to specificity & sensibility when generating human-like responses.	https://drive.google.com/open?id=1H7Y4X9waeLpBVuDyJ7JVjFM0uEsIcKke	Tensor Flow, django, Python , React , Flask
21	F21-21-R-DeepDub	DeepDub	Making videos more accessible to people who speak different languages, using deep learning and image processing techniques.	https://drive.google.com/open?id=1JA8bG-3lLdtgOhEJATBtnH6ieOW51M7r	Python, React, Fast API, Django, Pytorch
22	F21-22-R-DeepScene	DeepScene	Generating an animated scene from a script	https://drive.google.com/open?id=1fFLRKSR56xn7RmfTkNXqYj_tXHIixxBM	Python, Unity
23	F21-23-D-MyHealthPassp	GreenHealth Passport	For our final year project, our idea was to create a digital health pass. It is a solution designed to give you full control of your health records and data. you can choose voluntarily what information to share and where to share it. It will give organization's staff and regular citizens to manage and share their personal health information in a privacy preserving way it will also provide a solution for organizations to verify an individual's health credentials through a digital wallet.	https://drive.google.com/open?id=1xOR1x8ufOU7YuBAZIh6QiiFbQslwrU8v	React Native, React Native (Hybrid), Solidity, EthersJS, ReactJS, Etherscan, Remix.io
24	F21-24-D-SmartGrocery	Speech Enabled Grocery Application with Smart Categorization	It is an application that enables users to order groceries online. However, what makes this app unique is that it enables people to order groceries using their speech (Urdu or English), categorizes edible items that would be safe or unsafe for the user and also makes a user profile for further saving the user's most frequent ordered items. Through this application we want to work further on improving Urdu Speech Recognition.	https://drive.google.com/open?id=1sxQuoDCGt_GMKqh-579hZ4gXApx9zMUG	Python, Flutter (Hybrid), FireBase

25	F21-25-R-Cleanify	Cleanify: Optimization of Waste Collection Tasks in Smart Cities	Project domains: Artificial intelligence, machine learning and data visualization. In this project, we will deal with the problem of poorly managed waste collection from urban waste dumping sites. Currently it is a common sight to find large piles of garbage in residential areas, parks and bodies of water due both to poor waste collection management and lack of compliance to waste-dumping rules by the population. As this causes a large number of waste-related illnesses as well as environmental pollution, there is an urgent need for a smart solution for waste collection. In this project, we will develop a waste monitoring system that uses, among other data, images of dumping sites to determine how urgently a waste collection vehicle needs to be dispatched to the area. Data from the monitoring system will feed into an intelligent decision making module which will run optimization algorithms to provide the waste management authorities with an optimized waste collection route and schedule that minimizes cost while prioritizing timely waste collection. The decision making module will be integrated with a web-based management portal that will perform several functions, for example, allow the authorities to schedule waste collection, visualise incoming data from dumping sites, and decide optimal bin placement. In addition, it will include functionality for urban residents to report illegal dumping so that illegally dumped waste can be promptly cleared up. We will aim to produce a good quality research publication from this project.	https://drive.google.com/open?id=15AqeFGxv4zGWg36gS2YGIxOMiXFPcsiU	JavaScirpt Fullstack (MERN), Python, Microsoft SQL, Flask
26	F21-26-R-AttackHerald	AttackHerald: An early warning system for malware attacks	Aim is to predict cyber attacks generated by malware before they actually materialize, so that they can be prevented from occurring instead of being flagged after they have occurred. Malware-generated cyber attacks include distributed denial of service, ransomware attacks, and financial information stealing. Before a piece of malware launches an attack, it is likely to engage in some pre-attack behaviour in preparation for the attack, for example contacting a malicious control server. This pre-attack behaviour can be observed on infected hosts or networks as an evidence trail pointing to possible upcoming attacks. The goal of this project would be to first analyse a large amount of malware data from varied sources to confirm that pre-attack behaviour exists, and then develop an attack prediction mechanism that monitors a host or a network for such suspicious behaviour in order to predict an attack for timely prevention.	https://drive.google.com/open?id=1Si3MPTel7V6pEzhcsMBbGdc4U1bvaKlj	JavaScirpt Fullstack (MERN), Python, BASH SCRIPT
27	F21-27-D-AuxVision	AuxVision	Our project aims to support the visually impaired by enabling them to perceive their environment and allowing them to navigate without any external assistance.	https://drive.google.com/open?id=196NzDrd38qWOGtz3RIi6BFmXsC_u2tNo	Python, OpenCV, TensorFlow, Raspberry Pi.
28	F21-28-D-PRS	Parking reservation system	An online parking reservation system which uses image recognition of a license plate to automatically book and unbook a parking spot.	https://drive.google.com/open?id=1jQ1dLV_BwrRyM9vnH2hlDqH8n_ZvvFAi	Android - JAVA, Python, Reactjs, Firebase
29	F21-29-D-ADERS	Accident Detection and Emergency Response System (ADERS)	The system is to provide support in case of car accidents. The accident will be sensed through sensors present in smartphones, and relevant authorities will be informed about the exact location of the accident. Emergency contacts, and the people using this application in a certain radius will also be informed of the accident. The authorities will be provided with the shortest route to prevent any delays.	https://drive.google.com/open?id=1mjiz8-8SDXeLNfTIeXbj6ryYYTbrggln	JavaScirpt Fullstack (MERN), Android - JAVA, Java Spring Suite
30	F21-30-D-PlanitPK	Intelligent Tourist Guidance System	Web/Mobile app which uses ML/NLP techniques to deliver an intelligent tourist guide	https://drive.google.com/open?id=1L3-p9IFO6I7C5-FLG6-I14vMIlzgerru	Android - JAVA, Python, JAVA, React JS (Front-end), Material UI, RASA, Firebase
31	F21-31-D-MILDDA	MILDDA	Lung diseases result in 3 million deaths every year. In Pakistan 55,521 people die annually due to respiratory diseases. Everyday a radiologist looks at hundreds of x-rays and CT-scans. Each image takes around 10 minutes to be read carefully. The scans are then sent to the doctors who read them again and they give a detailed final report. This process takes a lot of time and then the critical cases take even longer to be identified which results in delayed treatment. Since late December 2019, the coronavirus disease (COVID-19) has been causing serious lung damage and breathing problems. In addition, pneumonia, a form of lung disease can be due to the causative virus of COVID-19 or may be caused by other viral or bacterial infection. Hence, early detection of lung diseases has become more important than ever. We are making a system that detects lung diseases such as COVD-19, pneumonia, lung cancer and tuberculosis. The radiologists can upload medical images such as CT-scans and X-rays. The images are processed and cleaned first, then they will be passed through a convolutional neural network (CNN) which will then classify the images into diseases. The probability of a given disease will also be shown to give an accuracy measure. This system will help point out the critical cases in a particular class/disease. This system will also make the detection of COVID-19 faster. This system will be there to help the doctors and radiologists as they will make the final decision for the patient.	https://drive.google.com/open?id=1MLiH_cZq4g893N8PphI4GHB_Ns-wdvdr	JavaScirpt Fullstack (MERN), Python
32	F21-32-D-SSpeech	Scribbling Speech	An application to draw 2D animated drawings with speech input using Natural Language Processing and Recurrent Neural Networks targeted for kids for educational and entertainment purposes.	https://drive.google.com/open?id=17Gp-xbLj77timfEvf9eSIKMWXYGPkRJj	JavaScirpt Fullstack (MERN), Python, JAVA
33	F21-33-D-navPal	4D Navigation with AR for Indoor	A user will be guided from its current location to the desired destination inside of a building.	https://drive.google.com/open?id=1pEWlgeBAZydC5ZagDJT5PwvxHRjRfn82	C# .NET, Unity
34	F21-34-D-VRun	VR Fitness	A VR app to provide an immersive and fun exercise at home or outside.	https://drive.google.com/open?id=1mImGiNekIezDvgvT3uigxvjgEKTCQlcr	C# .NET, Unity
35	F21-35-R-ViolenceXplainA	Explainability of Neural Networks	Explainability in machine learning is a huge problem in today's modern world. Image classification techniques tend to act as a black box, not providing any information about what made them arrive at a particular decision. Our project is research based and we'll try to evaluate a couple of techniques to identify which is trained better to break the black box and know what is happening behind the scenes. We'll be focusing on two image classification techniques i.e. LRP (Layer-wise Relevance Propagation) and CAM (Class Activation Map) which propose a general solution to the problem of understanding classification decisions by pixel-wise decomposition of nonlinear classifiers. These techniques introduce a methodology that allows to visualize the contributions of single pixels to predictions for multilayered neural networks and identifying regions in images which lead to classification decisions. Throughout our project, we will try to test different datasets and try to evaluate which out of LRP and CAM works better at image classification.	https://drive.google.com/open?id=1EPz7y0zy_Mjs6IMy9IMNEXTiU1GQlEBJ	Python
36	F21-36-R-BabyNeuron	Baby Neuron	Classroom/Learning environment for children using 3D models and VR	https://drive.google.com/open?id=1wACarxtH-2jv1ZqvVbNR3zb4goR-PWjf	C# .NET, PHP (Laravel/CodeIgnitor/Yii/Zend/Drupal), Unity, Oracle
37	F21-37-D-WicketToWicket	WicketToWicket: A tool that performs predictive analysis on cricket matches using deep learning techniques	The aim of this project is to replace the Hawkeye technology by predicting the ball trajectory from three different positions i.e. from bowler's bowling action, ball swing and seam. It will also suggest bowler's top bowling strategies, batsman's top batting strategies and come up with the most effective combination of players which will help in team selection for any team. It will also predict maximum target score and winning chances of a team in a match, and generate cricket highlights on demand.	https://drive.google.com/open?id=1KDRdiOsFGsEhmNkZi7vNXH2BjgDnApl3	PHP (Laravel/CodeIgnitor/Yii/Zend/Drupal), Python, Selenium, MySQL
38	F21-38-D-HospitalAid	Hospital Aid	HospitalAid is a project aiming to facilitate hospitals by using their live camera feed to monitor the hospital and detect certain gestures/events/actions and signal the appropriate person. It is an industry-based project approved by the hospitals and would be helping in implementation of SOPs alongwith other medical procedures.	https://drive.google.com/open?id=1vF3F3uUOS_OrP8GRxEIdAThMzZcCM-2f	JavaScirpt Fullstack (MERN), React Native, Python, Firebase, Flask, Pytorch, Tensorflow, Keras
39	F21-39-D-MediEye	Medi Eye	Medi Eye will use live camera feed to monitor the on-going activity in medical institutes. It is an industry-based project approved by Maryam Memorial Hospital, which will enable the hospital's managment to successfully detect any suspicious/threatening activity in the institute's premises.	https://drive.google.com/open?id=1E7jD85ydbcM2_bVfKJ49rM7YxinIDGXWZ	JavaScirpt Fullstack (MERN), React Native, Python, Firebase, Flask, Pytorch, Tensorflow, Keras
40	F21-40-R-HDWallet	Privacy Preserving Crypto HD Wallet	Privacy Preserving Crypto HD wallet is a crypto currency wallet that aims to provide security, privacy, and full control to its users. It is an Research and Development Project. Motivation: - Few to none Pakistani crypto-wallets in market - Crypto-Exchanges aren't very reliable. Over 50% of exchanges have been compromised in the past. - Crypto-currency and blockchain is very future oriented. Innovation: In today's date, most of the crypto-wallets have access to your private key to manage transactions on your behalf. This makes the location of your wallet known to them and hypothetically, they can transfer your funds to their own accounts pretty easily. We have proposed a wallet based on Hierarchical Determinism. This will ensure the integrity of a person's wallet and all of his transaction. In this scenario, only the owner of a wallet will have the access to his wallet and his transactional history.	https://drive.google.com/open?id=1PxUvLxVZHhHaywL3HcVW3Dil-u2VbmCo	JavaScirpt Fullstack (MERN)
41	F21-41-D-AutoFYP	FYP Automation	This project is web based and Android based in which student that are doing FYP will register and tell about their group members, project details and supervisor. Then system will create different FYP panels and each panel will be assigned to different student groups throughout the year. After that each group has to submit report about their project to their supervisor on different times. If they don't submit it on time then reminder mail will be send to all group members and if they submit late then late notification will be send to supervisor. After that system will give evaluation form to FYP panel members for Mid and Finals of FYP-I. Similarly, for code evaluation students will submit it and code evaluation form will be given to non-Phd teacher. After evaluation teachers will upload marks and system on the bases of marks will generate Students grade. Similarly, same process for FYP-II.	https://drive.google.com/open?id=15ZoNEzuebpwhXNNMpAB8UuUPrsb76suB	JavaScirpt Fullstack (MERN)
42	F21-42-R-HaathKiBaat	Sign Assistant	We want to make a virtual assistant that will communicate in sign language to assist the deaf/mute people. The basic functionalities of our assistant includes Searching over the internet, sending Emails, setting Reminders, using Camera and opening and closing of Applications. Other than that, the distinct feature of our assistant is that it will convert any given Audio (URL) into sign language.	https://drive.google.com/open?id=19A_Ps8E_oIKClynYQMt4zfkcYZNjzUY9	React Native, Python
43	F21-44-D-UrduAssistant	Personal Voice Assistant For Urdu Language	Voice assistants or personal voice assistants are programs using natural language processing (NLP) and speech synthesis to perform certain tasks on the user command. Currently, they have been a major part of our smartphones, computers for the past few years, If you are iPhone user certainly you are using Siri, or if you are an android user you know your google assistant. So, we built our own Personal Assistant for Phones. Functions: The system provides all the below stated functions. - Opening and closing an application - Altering system brightness, volume - Accessing bluetooth, WIFI - Dial calls and send sms	https://drive.google.com/open?id=14nS7tl7yvwMZwqrBzFWMa4Mbr6XYateg	Android - JAVA, Python
44	F21-45-D-UrduMiner	Urdu Audio Miner	Audio mining application can be used to search audio or video content that contains speech. Typical applications include searching large audio/media archives, where little or no information is available that describes the audio content. This could be used, for example, to retrieve relevant clips for a news story from a large video archive.	https://drive.google.com/open?id=1F5nY2IwLI7AC-uXBwIcLOq6P2zTndb-e	Python, Kaldi, Flask, Javascript, Scikit-Learn

45	F21-46-D-IAssistant	Intelligent Assistant	We aim to build an app that takes a pic as input and returns a story from that picture by generating captions using DIP and deep learning and converts that picture story into speech too in local languages like Urdu. Also this app will assist a blind man by guiding him about his surroundings by speech generated from the details that will extracted from the imagery being captured live via camera.	https://drive.google.com/open?id=1sU-bQQ2aZZ9a2FjoFvBhbkanV5wPEov8	React Native, Python
46	F21-47-D-MemeAnalysis	Report to Powerpoint Slides	A web app where User uploads a Document and the User gets a PowerPoint Presentation Slide with key text and images in return	https://drive.google.com/open?id=1FLZYjZ-L9LShKLS__tdQ-octyD9d3HDL	Python, SPARQL based database
47	F21-48-D-RSA	Route and Safety Awareness using android app (RSA)	An AI-based app that will assist the driver with the road signs, boards that are just across by. This project has three phases: In 1st phase, Real-Time video would be captured by their surroundings and that will be given as input to the Android app, and here Preprocessing would be performed on Each Frame of Video. In the 2nd phase in which deep learning and Image Processing Algorithms would be implemented that will detect the Direction Signs, Boards, Safety Signs. In the 3rd phase, It will Classify between that Sign, Board using deep learning algorithms. In the 4th phase, it will read text written on Boards, and convert that sign image to text then it will convert that text into audio that the driver can listen to using the app.	https://drive.google.com/open?id=1nkYnmEGLo_-L8Fi5eCbzbTzmMQzmNEkh	Android - JAVA, Python
48	F21-49-D-TravelBuddy	TravelBuddy (AI Based travel guide)	A mobile based travel application which includes functionality like translating banners/signboards (Urdu to English), Safety Module for travelers, Weather Updates, Travel Packages details, Nearby services details (hotels, malls, markets etc) and TravelBuddy (a social platform for travelers). It will also have an interactive chatbot which resolves queries about services provided in the app.	https://drive.google.com/open?id=1yV885SrRtcpf-SylSkJm5hvy2Q9t8Bwz	JavaSciript Fullstack (MERN), React Native, Python, React Native (Hybrid), NodeJS, Firebase, Material UI, React Native Paper, ReactJS, Tensorflow, Flask
49	F21-50-D-MimicBot	MimicBot	Voice cloning and Text to Speech Synthesis is a problem that has applications in a wide range of scenarios. They can be used to read out pdfs loud, help the visually impaired to interact with text, make chatbots more interactive etc in any voice. MultiSpeaker Text to Speech synthesis refers to a system with the ability to generate speech in different users' voices. We will work on mimic bot that can take input as text from the user that user want to speak and audio that user want to clone.	https://drive.google.com/open?id=1kAZg1IdGyHiGtBETuvVkBUUs4iGQOkEm	Python, Flask
50	F21-51-D-PAnalysis	Personality Analysis using Social Media Profiles.	Today, social media provides ample information and entertainment to its users. Using this platform people can share their opinions, ideas through posts (tweets), pictures (Instagram) videos etc. in the form of micro-blogging across all the global boundaries. People often try to portray their 'ideal' image on these web pages in order to gain a trusted and loyal following. Thus everyone has an online personality, created by what they share on the internet. This personality is true for many people but in a few cases this may not be the same as the real one. The motivation of this project is to identify the personality traits of an individual by using his/her social media profile. It will mainly focus on Twitter accounts as it is very popular, and people reveal more about their personality through tweets than Instagram or Facebook. Thus our target is to teach 'how to analyse a Twitter Biography', 'what are the different types of personality stereotypes' etc. that can be used for various purposes like marketing, research, etc.	https://drive.google.com/open?id=1IplEQfratiLGR_uQ6fVMMQ2xrervJDD8	Node , MySql, Python, AWS
51	F21-52-R-XAIHate	Explainable AI for Hate Speech Detection for Urdu	Hate speech is a challenging issue plaguing the online social media. While better models for hate speech detection are continuously being developed, there is little research on the bias and interpretability aspects of hate speech. So, the purpose of this project is not to just classify text as hate speech or not, but also explaining the reason that why it is hate speech.	https://drive.google.com/open?id=1LEGWDUKBl-Uv5HVlqFRzRwKQXp2lZ_HH	Python, Flask, css, html, php
52	F21-53-D-UrduOCR	Urdu OCR	The idea is to make a useful tool as Android app and web application to convert image text into editable text which can be edit and share at any platform. It will also reduce the size of the data as image text data takes great memory as compare to textual data.	https://drive.google.com/open?id=1RZd7LSSOD4Rycw1-3cOjUJr6qQM-KQdE	OpenCV, Tensorflow, Github, Python, Matlab, Visual Studio
53	F21-54-D-SceneGen	Smart helmet	We will be developing a helmet that will detect the movements of vehicles through a rare camera and will tell the rider whether he can take a turn or not. This is idea is based on AI and tools we will be using are raspberry pi and python.	https://drive.google.com/open?id=18xYSOKwLxgAiHp22TKUAXMZElpvdesEM	C# .NET, Python, Unity, C, C++
54	F21-55-D-AutomateIt	Voice Control Home Automation for Pakistan in Urdu	Home automation allows us to control household electrical appliances like light, door, fan, AC etc. Lot of systems are developed for English speech, but this is of it's first in nature will be made in Urdu language for Pakistani community.	https://drive.google.com/open?id=1Ksqw82SnG8wkBDYY57It3rIiWjglzYfJ	React Native, Python, GO Lang
55	F21-56-R-VCSDCar	Voice Controlled Self Driving Car	We will first create a self driving car that can avoid obstacles and have other functionalities to drive by its own. After that, we will deploy a voice controlled model on top that will be used for performing actions like stop, start, turns, switch on lights, play music, etc using urdu (some additional english words may also be added)	https://drive.google.com/open?id=1bP_-CNFfefX0KOushAIBkOMke5gnF1JE	Python
56	F21-57-R-Covitector	Covitector (COVID 19 DETECTION THROUGH COUGH)	This is an industry project (Research and Development) where we will build a platform which will detect if one has covid through the means of acoustic (forced cough recording on cell phone)	https://drive.google.com/open?id=1-UukPfPXLfBHHxEjlR11Bb_zS7KM5E2T	JavaSciript Fullstack (MERN), Python, Flask, Firebase, Google Maps Api
57	F21-58-D-SecureBallot	Secure Ballot	Our project is an E voting mobile application completely based on block chain technology. It will allow the user to cast the vote. Its target audience is the overseas citizens who are unable to vote because of physical voting system. It will be a decentralised system which makes it more secure and reliable. It will also count the votes, show results and make sure that basic rules of the voting system are not being violated.	https://drive.google.com/open?id=1XzdmixiW2vWiZZi85C6RSdUZQvjH03Tq	Flutter (Hybrid), Ganache(Solidity Language), Firebase, Web3
58	F21-59-D-WAC	Web Application Firewall (WAF)	Web Application Firewall(WAF) is a web based firewall that runs as a reverse proxy in front of web applications to monitor, filter and block out the packets as they travel to and from a website/web app. Running as a network appliance, server plugin or cloud service, the WAF inspects each packet and uses a rule base to analyse Layer 7 application layer logic and filter out potentially harmful traffic that can facilitate web exploits. It analyses Hypertext Transfer Protocol (HTTP) requests and applies a set of rules that define what parts of that conversation are benign and what parts are malicious.	https://drive.google.com/open?id=1kBJ1w-X-QQtGO43UKdniwA5nxuqkldRA	Python, Django, React
59	F21-60-D-Hashbook	Decentralized social media (hashbook	A decentralized social media where user gets paid for their data	https://drive.google.com/open?id=1laCdVKcalp2C_mdPjMfybVL6ev_TIMbu	Android - JAVA, Solidity
60	F21-61-D-IInterview	Intelligent Video interview based pernality assessment	the video and audio based processing is applied to automatically assess the personality of person giving interview.	https://drive.google.com/open?id=11o17yK4k3fRYQvLUqKmyvwBV0Q15sg_I	Python, Flask,Mysql,Javascript with jinja
61	F21-62-D-Notefy	Video Lecture Summarization / Lecture Summarization from Video Lectures	During Covid times, students faced a issue that if they have to revise a lecture; they have to listen whole 1/1.5 hours video lecture again. Keeping this issue in front, this idea generated that why not make a software which automatically generate a summary from a video lecture and also generate notes for the student. So, student don't have to listen whole lecture again. He/she just have to read that summary and notes for revisiting the lecture. So, the project is a online web based tool, which will generate summary (from audio and video) and notes from video lectures for a student.	https://drive.google.com/open?id=1Yya44s0-9rnopv3geUde8gXc5wov0f3T	JavaSciript Fullstack (MERN), Python
62	F21-63-D-ForestFellow	Application to Monitor the Tree Plantation	The app will not only keep the tracking record of trees, but will also monitor their growth, it will also display species information of tress, and will keep a track record for the maintenance taken for the tress.	https://drive.google.com/open?id=1uJzoPQKAS5R-Lu4itk3dLSFT9E5iCP8T	Python, TensorFlow, PyTorch, OpenCV, Flask, MySQL, Anaconda
63	F21-64-D-eCampus	e-Campus	e-Campus aims to make transactions within the university ecosystem cashless by implementing a campus-wide blockchain based payment solution that benefits faculty, staff, parents and students alike.	https://drive.google.com/file/d/1c3-olYDpRxGQVpUqldZ8784IhQRzCjNh/view?usp=sharing	JavaSciript Fullstack (MERN), React Native, React Native (Hybrid)
64	F21-65-D-Overhaulin	Overhaulin' - Blockchain-Based Car Auction System	Overhaulin' is a blockchain-based car auction system that will help facilitate customers looking to buy or sell a car. The maintenance/accident log of the car will be stored to help customers verify the repair history of the car. Customers will also be facilitated through a car recommendation system, to cater to their unique needs.	https://drive.google.com/open?id=1ObwBAmQ18LNkUrsnIKQS4pWzonzzs70m	JavaSciript Fullstack (MERN), Solidity, Ganache, truffle
65	F21-66-D-SmartBot	Chatbot	We will be developing chatbot, just like an Ai assistant, which will be trained on dataset to solve queries regarding the admission procedure anr all admission related queries of FAST NU that can be in English or in roman urdu.	https://drive.google.com/open?id=10yw1lM0EQr2eTIo8NCdpdJa6k62-JO09	Python, Tensorflow, Machine Learning
66	F21-67-D-HateSpeechIns	Hate Speech Inspector	A data analytics app that will help visualize the hate speech containing Islamophobia, Racism, and Sexism on Twitter	https://drive.google.com/open?id=1KoHZrKQwwdKzpIfYRtVK6vJSlK3hL2kx	React Native, Python
67	F21-68-D-PhysicsAR	First aid administration assistant	Using AR,Ai and dip, we will create an application that will assist unequipped first aid responder	https://drive.google.com/open?id=1FylKD-hluzNOjv2vo9sWP6TXaGUyRNsU	Android - JAVA, Unity
68	F21-69-D-Hazri	Aud-Able	Helping the deaf community by translating the Pakistan Sign Language(PSL) from video into text form, so they can interact with people without any hindrance.	https://drive.google.com/open?id=1AfqCCAm76r1GOltYgxKE3s18L7o7V0Sn	Python, Flutter (Hybrid)
69	F21-70-D-MedDetection	Medicine detection for visual impaired people	Android application which will detect the name and description of the medicine after scanning it using camera.	https://drive.google.com/file/d/1YraZSQVAbcallwZvbTPqJguvx24t9uwm/view?usp=sharing	Android - JAVA, Python, JAVA
70	F21-71-D-FitnessMadeFu	AR Multiplayer Game	A two player augmented reality racing/shooting game will be implemented which can be played on a smartphone.	https://drive.google.com/open?id=1YMkHfOr92Rsth4UGLFLZLP1h9kWjonF1	Android - JAVA, Python
71	F21-72-D-Muaawin	Swari	The current ride hailing service is extremely centralized. Central authority has all the control and access to all the data. Block chain due to its immutability explores the possibility of decentralized application in ride hailing service. In this regard we explore smart contracts to build and deploy functionalities such as fare calculation. The idea was to create an efficient system for both drivers and the passengers for their profitability. An effort to bring smarter transportation for society.	https://drive.google.com/open?id=1VGFUevUmOX7WL6RC-FBGrq1k_52z7MBo	Android
72	F21-73-D-ODAM	Online Digital Advertisement Marketplace (ODAM)	We are going to automate the the on-road digital advertisement boards using IoT based Technologies. We will provide web and mobile applications that will ease the process of changing the advertisement from a remote location. The dynamic billing shall be implemented using the crowd detection algorithms.	https://drive.google.com/open?id=1d8A-Ut2JT1QuEUb6rXlK5J08c1b28zF1	JavaSciript Fullstack (MERN), Python, AWS Developement

BS-FYPs (Spring-2021 - Fall-2021)

S. #	Short FYP Title	FYP Title	FYP Highlights	Link to the FYP Report	Tools, Languages/ Technologies
1	S21-01-D-RETBlockchain	Real Estate Transactions by Blockchain	RETB is a web application that will eliminate the need for a property dealer as a middle entity and allow buyers and sellers to interact directly through the application with the use of smart contracts. Upon completing the transaction, the data of the transaction will be added to the Ethereum blockchain network, which will be used by excise and tax department to view due taxes, and real value of the plots in real estate.	https://drive.google.com/file/d/18T4oSkAwhtcgZcsk-KM5rPt2Wmf7ZzDC/view?usp=sharing	
2	S21-02-D-KhareedoFarokht	KhareedoFarokht	Khareedo Farokht is an android application that is used for comparison of same products available at different online vendor stores. The user can search an item and compare its price from different websites and check the price trends.	https://drive.google.com/file/d/1MIrDcotqm6ID1m5DYVaeIdFKATsjJY8g/view?usp=sharing	
3	S21-03-D-IntelligentUAV	Obstacle Avoidance using AI	Intelligent UAV is a system that is used to detect obstacles in a drone's path and avoid those obstacles to reach a goal. We aim to use Ultrasonic and Infrared Sensors to detect obstacles on a Raspberry Pi and then use Computer Vision techniques as well as Obstacle avoidance algorithms to avoid the detected obstacles.	https://drive.google.com/open?id=1tgfFS7QTKlI98sKdKO7mbnhqNH4GAfcr	
4	S21-04-R-CovidDetector	Detection of COVID-19 disease using Chest X-Ray images	A proposed approach that uses a model to detect Covid-19 using CXR and CT images based on the transfer of learning diagnoses Covid-19 and pneumonia. It diagnoses the above-mentioned combination of diseases. They classified very similar effects of disease on lungs using different deep learning models.	https://drive.google.com/file/d/1d_DFpd1ZBAwA2Uv5ZpbZT3TsnS8-GEN0/view?usp=sharing	
5	S21-05-D-NRS	NEWS Recommendation System	NRS is a website, where we will recommend the news to our users according to their interest/ previous reading.	https://drive.google.com/open?id=1mbyHcPgbdim1ghTGUcEcYO8otsmsLEv3	
6	S21-06-D-NewsInsight	NewsInsight: Name Entity Trend Analysis in the News Community.	NewsInsight is an interactive website based application platform to enable end-users to explore and analyze real time name entity trends over the news community using natural language processing techniques with less effort in terms of time and resources.	https://drive.google.com/open?id=1ShUGUAXtpRu-cbZ5BfD491R9KMin4pLH	
7	S21-07-R-CitadelGuard	Cyber Attack Early Detection and Prediction using Honeypot Traffic	CitadelGuard is a machine learning ensemble model based attack detection classification technique that utilizes several extracted features from honeypot logs deployed on a linux machine.	https://drive.google.com/file/d/1aujXgiwWU24rTPS1eJ3ELVoOuMsSNaJq/view?usp=sharing	
8	S21-08-D-Sortie	Clash-free Schedule Finder and Task Manager for Students	Sortie is a virtual assistant that takes care of all of their time related issues. From giving them a clash-free schedule to helping them with all their academic tasks throughout the semester. Whether it is a reminder for an assignment or notification about your next class or your progress in the project, our application assists you throughout the way with timely reminders, alarms, sticky notes etc. It also automatically sets up alarms for every morning, making sure you are never late and gives you a todo list reminder at a predetermined time, so that everyday, you get a notification on that particular time of the day, about all of your pending tasks.	https://drive.google.com/open?id=1jVZGwq0Qsz57sBbBr_qzFiM1BhJK7ZBM	
9	S21-09-D-CalorieMate	CalorieMate	CalorieMate is a lifestyle cross-platform app, spanning on both food and fitness offering a new way of living a healthy lifestyle. It does so using machine learning/deep learning techniques to predict the daily calorie intake along with the serving size/quantity of food by taking a picture of the meal. The application further maintains a diary, provides meal and training trackers and recommends calorie intake to reach a weight goal relative to each user's profile.	https://drive.google.com/open?id=1-ZKszzMy-eNi81xum0UQP71J-3S09Ez1	
10	S21-10-D-E-Monitor	Online Exam Monitoring System	Online exam monitoring system or E-Monitor is a desktop application which will help institutions conduct online exams with utmost credibility as students will be proctored throughout the exam. This project was initiated after schools and universities moved to online mode of learning which also includes online exams and online quizzes.	https://drive.google.com/open?id=1IDBp98ROv8KuoxQrvX859_sM0YOUXwcC	C#, TensorFlow, Colab, Python, MySql, OpenCV, Visual Studio
11	S21-11-D-SmartWaterTank	Smart water tank remotely controlled by IOT	SmartWaterTank is an anroid app that allows its users to control the water level of thier water tank automatically.	https://drive.google.com/open?id=15aiix7wjAjlbkbdd7_syMuMyJVqglNJX	
12	S21-12-D-FIDE	MIDE: Monitoring IoT Devices at the Edge	In our project, we are processing our data on netwrok layer rather than on application layer to avoid these problems and reduce the load being transferred over the network. We'll be using an everyday-use appliaction i.e. weather monitoring system to demonstrate the implementation used in this project	https://drive.google.com/open?id=1IkVi5Kr64gMdfWwVcTr-the20fHQAH38	
13	S21-13-D-Kun	Smart Home System using Urdu Voice Commands	Kun, which is a Smart Home System, is to be designed to control everyday appliances inside the home using Urdu voice commands.The system will be an Arduino based controller, which will connect with all the appliances and link with an Android application. This application will be used to get voice commands, which will first be converted to text, mapped to the specified command, and then sent to the Arduino controller system to perform different tasks with the appliances.	https://drive.google.com/open?id=1tJGvR0sawpnHboHcRD2DyglRSEFhaAOt	
14	S21-14-D-WiseTranslator	Wise Translator	Sequence to Sequence machine translation system which will translate Urdu text into English & vice versa keeping semantic, syntactic and contextual information in consideration.	https://drive.google.com/file/d/155iXeoKJyURqLGkL67rC8qfQGb_wI8bL/view?usp=sharing	
15	S21-15-D-HospiCare	E-Hospital	Hospicare is a telemedicine mobile application which provides a completely virtual hopital experience to the patients that don't necessarily need to physically consult a doctor (i.e., someone wants to consult a dietitian or a nutritionist or someone who just wants to update their prescription). The user(s) can book appointments, interact with the doctor and receive prescriptions. Hospicare lets doctors to review their patients and interact with them online via video and audio consultation services.	https://drive.google.com/open?id=14PnysvSloV31elU3N2Kx6KZmDiD6OBZV	
16	S21-16-R-PathVisualization	Path Visualization App for Visually impaired and Blind people	PathVisualization is a mobile application for the visually impaired and blind people. We will be training our dataset for the detection of objects using Yolo which is a very Fast and optimized deep learning model. Then we will be detecting objects in real time frames with the help of the model and measuring the depth of the images in frame and distance estimation task. Beside, NLP techniques will be used for the better understanding of the app for the user.	https://drive.google.com/open?id=1pRvJFZF3bE7r8U8NOzjwSE52wzPbFQy_	
17	S21-17-D-ToxDetector	Toxic Speech Detector	ToxDetector- A platform to detect toxic material in Roman Urdu on twitter. It will ask user to search on any twitter trend/topic and will show all tweets related to that tweet with toxic words being highlighted. It also shows the result in percentage. Moreover, user can also select any particular area' s tweets to be shown only.	https://drive.google.com/open?id=1aL74HfM4z6CvkDvyU2H5pqnU_OX5npnC	MongoDB, Kafka, React , Python
18	S21-18-D-VeeSum	VeeSum (Video Conferencing with Sumarization)	A web application which will allow the users to conduct meetings or classes just like google meet or zoom etc, with the added functionality of giving the user the option to record the meeting and generate its transcription. The user will also be given the option to summarize that text.	https://drive.google.com/file/d/1Eha0RG8IuYeqYx2eenGQSBC6aV5kw2XY/view?usp=sharing	

BS-FYPs (Fall-2020 - Spring-2021)

S. #	FYP Title	FYP Highlights	Link to the FYP Report	Tools, Languages/ Technologies
1	Road Awareness in Smart Cars using Raspberry pi	RAR is an AI/computer vision based system that will provide assistance to the driver as road awareness is added in the rover using deep learning algorithms implemented on Raspberry Pi. The system consists of two stages. The first stage focuses on "Traffic sign board detection" and the second stage focuses on "Traffic sign classification and recognition". Video input from the raspberry pi camera module will be taken from the surroundings and whenever a sign appears, the system will generate alerts to notify the driver through an Android application	https://drive.google.com/file/d/17tVVqnno2L7fOmSSmljo2qVT9bZoEq_P/view?usp=sharing	Python, Thonny, GitHub, Trello, Android Studio, Arduino, YOLO, Raspberry pi, Rover, Rpi Camera
2	FIT - FrameWork For IOT Applications	FIT is a framework that allows users to create complex IoT applications that involve stream processing, event processing, and complex event processing.. FIT is a generic framework aimed to be usable by the diverse users of CEP. A GUI is built upon the framework for generic as well as specific applications. Our GUI will enable users to use some components to create the application's pipeline.	https://drive.google.com/file/d/1RLkExGeghN_SjSTtO79FFBs8KDu_VwJ0/view?usp=sharing	Python, Django, AngularJS, MatrialJS, Kafka
3	Autonomous Exploration and Mapping of Unknown Environments	Scout Rover is a 4-wheeled differential drive robot. It is capable of autonomously navigating in an unknown indoor environment and generate a 2D map of its exploration. A depth camera (Microsoft Kinect v1) is used as the only sensor for capturing data from the environment and processed on a remote server to perform all these operations.	https://drive.google.com/file/d/1piMu3CeD5xEB7yDy5vk-yK-XU5s6Xsgq/view?usp=sharing	Python, OpenCV, Arduino, Raspberry Pi
4	Blockchain Based Digital Wallet	A general decentralized application payment system based on Ethereum blockchain technology to support secure payments, and data security. It can be integrated with any real world application or startups for its payment purposes. Apart from giving payment services we have built our own wallet application to provide wallet services through which users can pay each other using Blockchain Wallet.	https://drive.google.com/file/d/1nUp0uLTVtJTwKFFcuRPDeCXjV_f8nLug/view?usp=sharing	Mern stack , Solidity, Flutter, JavaScript,ExpressJS/NodeJS, ReactJS
5	Ground Based Air Defence Intelligent Decision Support System	An Intelligent Decision Support System for Ground Based Air Defence Environments. The FYP consisted of two basic modules. 1- Threat Evaluation 2- Weapon Assignment The Threat Evaluation subsystem evaluates the incoming Aerial Threat and assigns a Threat Index to the Threat. Based on that Threat Index the Weapon Assignment subsystem call on a Linear Regression model to assign a weapon to that threat. The Django based GIS web app shows the real time simulations asynchronous to the system.	https://drive.google.com/file/d/1ox7iO0wMPJWEuGoWYZCpCO46oTmpe8bj/view?usp=sharing	Django, GeoDjango, GDAL, QGIS, PostGIS, Protege, OwlReady, GraphDB, Sklearn, Pandas, Numpy, Python, LeafletJS, OpenStreetMaps
6	Biomedical Text Annotation using Knowledge Graphs	We created a web-based semantic biomedical text annotator for gene and disease mentions. For this, we use BioBERT to create models for NER and RE for the two entity types and the ontologies GO and ICD-9 as knowledge bases for entity linking	https://drive.google.com/file/d/1T5rrFtpEi5mt0_IqaPmn4InN1AquZqDh/view?usp=sharing	Django, html, css, BioBERT, PyTorch, Owlready2, Tensorflow, Pandas, NetworkX
7	The Autonomous Flight Supervisor	Air Traffic Control (ATC) is a mechanism put in place to ensure a safe, efficient and swift flow of air traffic all around the world. The primary objective of ATC is to guarantee separation between the aircrafts, regulate and facilitate air traffic and provide valuable information to the pilots.	https://drive.google.com/file/d/1ZvUvkYr4UopopREMak0E8ZGooQ8s179p/view?usp=sharing	BlueSky, OpenScope, Javascript
8	Bussiness Insight and Visualization Assistant	An web based data analysis portal dedicated to an organization and based on its Data Warehouse. It is embedded with multiple interactive statistical visualizations and provide multiple dashboards and a network graph to provide with bussiness insights and meet respective analysis requirements.	https://drive.google.com/file/d/1UDC6qnAVybgfQE_dhk-jl12z3Lx_vmZw/view?usp=drivesdk	MySQL Server, MySQL, Python, Bokeh, NetworkX, MySQL connector, Django, HTML, CSS, GIT, GitHub, VScode
9	BlindAssistant	Semantic based application to help the blind people in the outdoor.	https://drive.google.com/file/d/1BOu3MTMmdNMM5Mt_vE8s9UUp9W6f8eE-/view?usp=sharing	
10	Visual Circuit	A drag and drop tool which can be used to build robotic application and can be deployed on server for controlling robots.	https://drive.google.com/file/d/1oIG_Nxo2-NDYFVIMF0xJ1DyfemoTC7AV/view?usp=sharing	Python AngularJS NodeJS TensorFlow OpenCV Robot Operating System (ROS) Gazebo Electron
11	LookOut - Safety Application	Our final year project is majorly centered around an android application which provides safety features such as instantaneously contacting the user's desired emergency contacts as well as their nearby authorities. We think that with the rise in street crime and overall crime rate in the country coupled with the lack of government's initiatives and actions to oversee these crime rates, it is a high time to take things into our own hands and start educating the people by spreading awareness. This product aims to provide a sense of safety and security to its users.	https://drive.google.com/file/d/1TVSeMjTcPQPJ3wR81BSvsym2yQmNCen9/view?usp=sharing	Android Studio, JAVA, XML, JSON, Google APIs, Firebase Authentication, Cloud Firestore, Realtime Database, Cloud Messaging, SQLite
12	PowerUI - Spotting UI Display Issues	We envision to create a product that can perform black box testing of UI display issues of mobile apps with the flexibility to detect 5 most common issues in the mobile UIs and supports different mobile platforms. PowerUI will target developers and companies in the industry who wants to check the inconsistencies in their mobile app display. If there are any, it will detect and localize the region of issue to help the developer fix the bug quickly.	https://drive.google.com/file/d/1Br_0DAe5prlcWrnxVSUk5gVzMM6ZRPbZ/view?usp=sharing	Python, PyTorch, OpenCV, Flask, Html, CSS, JS
13	GoVitae - Blockchain based CV verification system	Our application is created to facilitate verification of CV for companies, especially in an open house environment. The course work done by each student will be inserted in the node of a blockchain which will happen each semester till the completion of degree. The approved stakeholders will be able to search all the work done by students during their degree tenure. Project is using a custom built Blockchain to provide authenticity, transparency to the work done. Major plus point is the time saving and transparent record keeping for both the university and the employers.	https://drive.google.com/file/d/1IsTQRnY6aKi5S9zgu7h4ldEZMFN50l0Z/view?usp=sharing	GoLang, Angular, Heroku, Git, MailGun, Atom
14	Chainify	A platform to build custom blockchains with modular consensus algorithms	https://drive.google.com/file/d/1gaLDQsJ6tibPBinBDL91v2eWTaKfjF5U/view?usp=sharing	GoLang, SvelteJs, Postgres, Github, Heroku
15	CloudSafe: Cloud Auth Auditor	CloudSafe is a web based AWS JSON IAM policies auditor meant for cloud administrators. CloudSafe will automatic pull IAM JSON policies from an AWS account once provided service account credentials and display the policies in JSON format. A user can then analyze the policies for potential vulnerabilities such as Redundant and Conflicting policies.	https://drive.google.com/file/d/1yELx2vFbBbESQUbmWcQYhKZuVz6P3W-g/view?usp=sharing	Python 3, Svelte JS, Boto3, Docker, Flask
16	Voice Controllable Web Application	BeMyHand is a voice controllable web application targeting differently-abled people who are unable to use their hands due to some underlying medical cause. It provides them tools like CV Builder, Text Editor, Portfolio Builder and Articles Directory. They can use their voice to operate these tools and surf the entire website be it page navigation, forms filling, scrolling, etc. It provides unmatched ease of use to its users at every stage. BeMyHand provides its users an online presence and a sense of independence in doing so.	https://drive.google.com/file/d/1CkUOxBJAyMQU-9whvpXDd5KY9wZwdWSN/view?usp=sharing	ReactJS, NodeJS, MongoDB, Flask, Google Web Speech API, Webstorm
17	3D industrial Control Test Bench	The project aimed to map 3 industrial plants i.e Heat exchanger, water treatment and air compression plant onto unity 3D with SCADA and PLC at backend. Cyber attacks are done on these virtual plants i.e on their PLCs and impact can be visualized onto unity of these plants	https://drive.google.com/file/d/1vJAK2uuzn2SkBaCOwC3OK7wywgkTXU1c/view?usp=sharing	Unity, Radzio, Low Orbit Ion Cannon, Wire Shark,Open PLC and SCADABR
18	Vehicle Speed Checking	Real Time Automated vehicle speed checking system for highways. System will be able to detect Number Plate , brand , type. System will store Extracted Number Plate and details in Database. System will be able to show camera and output on Web Based UI.	https://drive.google.com/file/d/1ZCZHItXoiQ61hMKQw1glgzPC4bpLp6qN/view?usp=sharing	FLASK , COLAB , PYTHON , LASER SPEED GUN , CAMERA , ML MODELS
19	PilotBuddy: A Real-time Anomaly Detection and Fault-Diagnosis Framework for Unmanned Aerial Vehicles	Military UAV missions are often of quite sensitive nature. Precision, accuracy, and low-risk involvement is of high importance in such missions. Fault detection in UAVs, in real-time, can greatly reduce the risk involved in flying and reduce the number of accidents. Pilot Buddy is a team effort to bring down the failure rate in UAV flights through early and timely fault diagnosis. Pilot Buddy is trained on flight datasets containing parameter changes from before and after fault injection in a UAV, enabling it to register UAV behavior changes during a flight and hence, and allowing the program to alarm the user immediately, upon fault detection.	https://drive.google.com/file/d/1Mo12m7SHduJmoPKugE4BkgUmAjFtMfbs/view?usp=sharing	Python, Google Colab, Flask Framework, FlightGear 2020.1.3, Telnet Socket Programming
20	Image Inpainting Using Deep Learning Models	Image inpainting can be described as a process to restore damaged or deteriorated image, or to enhance an image. The purpose of our project is to explore and use deep learning models on image inpainting in order to get the desired results. The user will be able to Inpaint the images using web app or android app.	https://drive.google.com/file/d/196FAHQjO54gTiR3RsOUSExmVtAO0DRAF/view?usp=sharing	Flask, Flutter, Tensorflow, Keras, Python, Github
21	HemaRays	A non-invasive approach to calculate hemoglobin levels through the smartphone camera. The user places his finger on the front camera and a 1 minute video will be recorded . The video shall be converted to frames to get RGB arrays and thus generate a PPG Signal.The PPG signal shall be used to extract features which will be used in the machine learning model to get accurate estimations of hemoglobin values.	https://drive.google.com/file/d/1OxooRkkeFU0B9HYP2aC21hn57s2SMQuv/view?usp=sharing	React Native , Python , Javascript , TensorFlow
22	Identification of Degree of Freshness of Fruits and Vegetables	An android application that detects the degree of freshness of fruits and vegetables present in an image. A Yolov5m object detection model has been trained on a dataset of around 60k images of fruits and vegetables. After training, the model has been deployed on a server. User captures image from camera or loads image from gallery or url, then image is transferred to the server where the model predicts bounding boxes along with type and degree of freshness of objects present in the image, and finally the resultant image is sent back to the the android application that displays it. Supported fruits and vegetables include apple, banana, brinjal, chili, cucumber, guava, lemon, orange, pepper, potato and tomato.	https://drive.google.com/file/d/1p4z1Da7sbEMgcQKfB6QCenp0POUYeYvx/view?usp=sharing	Java, Python, Android, Pytorch, Yolov5, Google Colab, OpenCV
23	Activity Recognition in Smart Homes Using Ambient Sensors.	For the management and monitoring of elderly people in a smart environment, we will be using deep learning models to identify activities performed by individuals and recorded through multiple sensors deployed in a smart home. In our project, a comparison of different models of Deep Learning is done for the Activity Recognition of Humans in sensor deployed smart homes. We will map the existing Deep Learning techniques (DLT) to the problem of activity recognition in smart homes. Our major concern is the imbalance dataset which includes some activities with more instances than the others and same activities performed by multiple residents.	https://drive.google.com/file/d/1uQHMZ0q2tIWpy15098admVREstsRQvQD/view?usp=sharing	Kaggle , Python , Python , Tensor flow , Android Studio , Java
24	Insider Threat Management System	InTMS aims to monitor employees' systems for malicious activities. The aim is to identify insider threats posed by trusted employees or those provided with special privileges before it is too late. Our project mainly focuses on the organizations with sensitive data like NESCOM, military, health care, IT and so on. Some of the features include tracking application usage, real time data monitoring, monitoring external devices and to make sure our application is running silently at the backend that no employee knows about. Each entry is captured against the system's name, date and time of the activity. All logs are sent to a remote server where they are securely stored and which only the CEO or a very trusted admin can access. This app allows organizations to keep an eye on their sensitive data and also hold the right person accountable in case of a mishap.	https://drive.google.com/file/d/1UeVIJBmNcPtdgay3k8ZzUxsT8rgtzr-G/view?usp=sharing	C# Entity Framework, Python, Django Framework
25	TailorMaster	An application that takes 2D camera image of a person and generates its 3D model.	https://drive.google.com/file/d/1r15VwTnM5bfEksoLZ3tJl9nwdMszdjZL/view?usp=sharing	

26	Guftagu	Athena, is an automated graph based Knowledge Extraction System that aims to solve the challenges of linked data by providing users the ability to retrieve and extract meaningful information without the need of having expert domain knowledge. Our system has successfully achieved the conversion of raw text from various genres to a well structured Graph format. This has enabled our users to structure, store, retrieve and analyze data quickly, in runtime.	https://drive.google.com/file/d/1wgyxpK9c6coXhzE1EHGwQfC9b0hjatNT/view?usp=sharing	Neo4j, Python 3.8, Flask, Jupyter Notebook,Google Colab, PyCharm, HTML,CSS, Javascript
27	Generating Precise Notes from Video Samples	In GoNotes, we extract the audio from video samples, and then transcribe the text from the given audio samples. The text is refined and the lecture will be highlighted to depict the important points and the key terms. The problem that was discovered was that video lectures tend to be quite lengthy and it becomes nearly impossible to revise them without proper lecture notes. So, we used both audio features and textual features to locate emphasized parts of the lectures. This way, by generating precise lecture notes, students will have access to well prepared lecture notes without putting too much effort and saving a lot of time.	https://drive.google.com/file/d/1w24BBANvNXq-6c6v1Lzbq9sKC2Cv1Le_/view?usp=sharing	Python, Google Colab, Flask, HTML, CSS, Wav2Vec2, Gensim, Punctuator, Pydub, Crepe, Librosa, NLTK, Ngrok
28	Uvea - Image to Speech for the blind and visually impaired	Uvea is aimed to be a mobile application for the blind and visually impaired that provides assistance and accessibility to them. The application would be doing so using object detection, classification and collision prevention through deep learning techniques.	https://drive.google.com/file/d/1BbMDUZln1oexXqbvab5VZcJyEkrq64WJ/view?usp=sharing	Dart, Flutter, Python, Tflite, opencv, scikit, numpy, pillow, git
29	Fashion Hunt- Image recognition and visually similar Clothing detection and retrieval	Fashion Hunt a.k.a BrandsWar is a web based application that is designed for searching similar clothing online. It uses deep learning techniques to get similar clothing items from various different brands.	https://drive.google.com/file/d/1wfgvDvOKIqUQeWQdysl_JrJOR-LjD-iD/view?usp=sharing	Py Torch, Flask, Selenium, Angular, Mongo Db, Express, Node Js
30	Threatify	Mobile/web application that takes the camera feed and inform the user about anmolous activities like fire, fighting etc.	https://drive.google.com/file/d/1KUiPNtv-ktLeoWpEyHjge93ANl9gKSWp/view?usp=sharing	
31	MedsParency	MedsParency is a medicine tracking system which ensures transparency of supply chain by keeping a track of the medicines delivered. By storing the tracks of a medicine through blockchain, one can know whether it comes from a valid source or not. So, buyers can ensure that the medicine they are buying is not fake or a knock-off while being able to purchase it from a local retailer or a popular pharmacy. Moreover, manufacturing and quality standards of both the product and raw materials used can be maintained according to local drug regulatory authorities or WHO standards to lower health risks and side effects. It also ensures price and hoarding control so customers will not be overcharged for short, expensive and sensitive lifesaving drugs and lessens the hassle of a manual documentation of supply chain, which is insecure, by storing it on an immutable and transparent digital ledger that can be accessed by anyone from anywhere.	https://drive.google.com/file/d/1YCoxvpK_HgiMHMmQTDo5BtoBNg3jaeZa/view?usp=sharing	Hyperledger Fabric 2.2, Golang, Javascript, Node, React
32	ShiftDrive	A user-friendly mobile application that recognizes the car by providing it's image/video, detects the damage parts of the car, detects severity of the damage parts and provides a platform for workshop procurement for the customer.	https://drive.google.com/file/d/1PNDhRst25u5idQqXRjy-GNCvQ1xRIEcN/view?usp=sharing	Python, Java, Makesense.ai, Android Studio, Google Colab, Google Maps - API, Ms Azure, GCP, Rest API's
33	CloudXplor	A system monitoring dashboard for on premise non manageable environments.	https://drive.google.com/file/d/1jzwsqu0mzcmW4S4OoPg7z3bHXWMYIxLM/view?usp=sharing	Java springboot, reactJs, linux kernel sysstat, sql sys_schema, sklearn, python
34	Virtual Classroom	VClass is an android application that will provide the features of a classroom from the comfort of people's home. It combines all the essential classroom features into one application. VClass also uses virtual reality technology for a more immersive and interactive experience.	https://drive.google.com/file/d/1pnPyWtRdCGVq9aD2CZjroq5VtDrD0Mvk/view?usp=sharing	Android Studio, Unity, Firebase, Blender, Photoshop, Photon Unity
35	E-Utility Services App	E-utility services app is an android application in which we aim to provide fast and responsive solutions for customers where they can search for a number of services; Electrician, Plumber, AC Repair, Mechanics, Carpenters etc. Location of these service providers will be available through map, customers will be able to search, contact, book and track service provider on map. After completion of work the customer can complete the booking, give rating and pay the bill by using Jazz Cash option or Pay by Cash option. The best service provider recommendation using skyline query and price prediction for specific service provider is also implemented in our app.	https://drive.google.com/file/d/1dDJyTiF29k0i_tdVaraUb_Pq33463qI2/view?usp=sharing	Adobe XD, Android Studio, Firebase, Java, Python, Google Maps API, Directions API, GPS,
36	ArchiTech	ArchiTech is an Android platform that, at its core, allows user to convert their 2D floorplan into navigable 3D models. These models are also viewable in AR. The platform also collects valuable information regarding the floorplan (cost estimates etc) and makes these available to the user. Furthermore, the application provides many platform related interactions for users to explore, share and compare floorplans as well.	https://drive.google.com/file/d/1o0VvYE_Oh5pq_hRHUXN87km52KX5a250/view?usp=sharing	Native Android, Firebase, Tensorflow, Flask, Unity3D, Vuforia
37	Remote Assistance Through Augmented Reality	RATAR is an augmented reality based remote assistance platform. RATAR platform allows customer care agents or technicians to work remotely, executing common technical tasks and maintenance procedures in real-time. The display of real-time 3D annotations on environments and objects help teams solve problems efficiently.	https://drive.google.com/file/d/1PYXgNFTy6opfY8_CuVID7qoCcw2bs3pZ/view?usp=sharing	1. Android Studio 2. Agora.io 3. ARCore 4. Firebase 5. Node.js
38	OJO - Smart Surveillance System	OJO which means an "Eye" in Spanish is a web based system which provides surveillance and reports violent behavior activities to financial institutions. It uses deep learning model to detect weapons and violence in a live stream cctv camera or recorded video. The system will then generate a red alert and enables the user to take action. He can then inform the LEAs who will receive the alert notification via SMS. User can also monitor the logs of the detected activity.	https://drive.google.com/file/d/1zQ-ygbAOK1o_lEV9hrpAuscVTOT9YLW8/view?usp=sharing	Python, Flask, HTML/CSS Bootstrap, MongoDB, Deep Learning (Yolov3 and 3D CNN) , OpenCV, Twilio API
39	BrandHub	BrandHub is a web application that acts as your online shopping companion and as a hub for Pakistani clothing brands. The data on our application has been scraped off from the official websites of these brands. Our product allows the users to search for items similar to what they want, make a match with their outfits, save their favourite items and make price and brand comparisons. The main goal is to save the valuable time and effort of our users.	https://drive.google.com/file/d/1vfmajUqSAUUxQX4jkfWy9uVMbr3DUZrP/view?usp=sharing	Beautiful Soup, Python, React, Machine Learning, MongoDB.
40	RanDecII	A desktop application named Ransomware Detector that detects Ransamware infected files	https://drive.google.com/file/d/1jBeODe1_MnZKAd04Otknb2Lh3xH5qfa7/view?usp=sharing	Python, Colab Notebook, Machine learning
41	Charity Go	A social trustworthy collaborative website where Donors and Non Profit Organizations interact to ease the difficulties in Charity Process. Organizations can initialize campaigns and projects and donors can view them and their real time updates.	https://drive.google.com/file/d/103UoEDED74PPntcpV2EPdAuaQl_XQfk2/view?usp=sharing	MEAN Stack, Python, Bootstrap, HTML, CSS, JS, Figma
42	Virtual Classroom	Interactive web platform for students and institutional mentors to take online education. Students will be able to interact with their mentors with full ease but it'll mostly be focused on providing the mentors a platform or tool through which they can take an in-depth report about every student's performance and also go through the student engagement in classroom activities.	https://drive.google.com/file/d/1vfBkpSdAN4XBPhcZtn_jMJ8uDWc_dXyC/view?usp=sharing	Django Python Web Framework, HTML, CSS , Bootstrap , JQuery , MYSQL, OpenCV
43	SmartSlides	We developed a system that can capture the teacher's whiteboard notes along with its respective slide. Hence, we designed and developed an Android/iOS and web app where the application will be able to record the lectures, apply our trained model to extract notes from the whiteboard and attach it with its respective slide and view them on SmartSlides which let you manage multiple courses, invite people and add them to the course and carry out threaded discussions.	https://drive.google.com/file/d/1Nt51KwHw1sPKqoUlOZjW12UqTIoJcPUg/view?usp=sharing	Flutter, Android, Firebase, Dart, Python, Kotlin, Microsoft Azure VM, IBM Cloud Storage Buckets, TensorFlow Lite, Adobe XD, Xcode
44	A machine-learning based load-balancing application scheduler for CPU-GPU system	Troodon is a scheduler that schedules OpenCL programs on the basis of device suitability and load balancing for optimal performance of heterogeneous system's with one CPU and GPU device.	https://drive.google.com/file/d/165MmiP2t1vLar1U7T4AYw1lW-43RJQms/view?usp=sharing	python, llvm, opencl, sklearn, node, ubuntu
45	SmartGharana	SmartGharana is an automated home system. It features a home assistant and home security in a single application that will help the user save time by simplifying daily tasks. The system uses natural language processing and image processing techniques to automate and assist users.	https://drive.google.com/file/d/1QlFfhm-MMZ57EKK_nRVBfVnlngWQ6aYF/view?usp=sharing	Flutter, Flask, Firebase Cloud Messaging, ESP32, Arduino Relays, Raspberry Pi, Raspberry Pi Camera, IR Sensor OpenCV
46	Obstructy - Remove to improve	Obstructy is an Android native video editing application. Its salient feature is the removal of unwanted obstructions (e.g. fences, grills, reflections, etc.) to provide an "unobstructed" image from a video, while also providing video editing features. Uses a recent work from the year 2020 involving deeplearning.	https://drive.google.com/file/d/1CTClKPEP_E5-mlXWoiVrPepUJc5zfygZ/view?usp=sharing	Android Studio, Java, XML, Python, C/++, Tensorflow, Flask
47	Artificially Intelligent Psychiatrist Bot for Elderly People	Artificially intelligent android application which provides users with a therapist bot on their phone. It works by providing the users with an interface where they can have conversation with the bot, it will calculate the emotion scores and give relevant responses in return. These responses can also include recommendations generated using the user's messages and interests. Also, users can see their emotional history via a graph, and write daily journals to have a great experience using app.	https://drive.google.com/file/d/1NNwH27cTkhmR-dgFaAy2i2yeEcunHEpS/view?usp=sharing	RASA, Django, Flask, GPT2, Android Studio, BERT, TensorFlow, Colab, SQLite
48	MeetingScheduler	MeetingScheduler is an AI Based virtual assistant that takes away the hassle of scheduling meetings from its users and manages the schedule on its own. The virtual assistant manages/ updates its users' calendars and informs users about upcoming meetings. It is a web application that provides an interactive chatbot interface to help its users communicate and query easily with the virtual assistant.	https://drive.google.com/file/d/1uU46d6AABU3ZmRx4k9Ra4m0FE87qKYkC/view?usp=sharing	RASA Framework, TensorFlow, Bootstrap, Google Calendar, Flask
49	JustC	JustC is a web application based on Python Flask. It takes the user webcam feed as an input and determine where a person is gazing at the screen. The system then uses the data to let the user control social media applications ie YouTube and Twitter.	https://drive.google.com/file/d/1D8lmKzV-43E2oGUheug5u9GfD6KKbi3z/view?usp=sharing	Flask, HTML, CSS, Bootstrap, Keras, Tensorflow
50	Racism Detection	ExRaDe is an web application which classifies whether given comment is a racist or not.Our system focuses on finding racism, enabling the user to detect which tweet or social media post is racist.We have trained our model to detect racism in roman Urdu.Moreover, we have provided the web interface to show results to the users.	https://drive.google.com/file/d/1LwbSYlnYOU8sNxNUDpO8OnWU0IrT3za3/view?usp=sharing	Python,Flask,Html,Css,JavaScript
51	Smart Eye	SmartEye is a web based application aimed at aiding businesses in their marketing. It will provide them with statistical reports regarding their ad placement with statistics such as number of interested people, their age brackets, gender etc.	https://drive.google.com/file/d/1RmJUo17IAKHnTJcmajCz8OiFF9GZcDJV/view?usp=sharing	
52	Scalable aggregation of text using big data tools	Our fyp revolving around data engineering where we are using big data tools(apache kafka, apache spark). It ingest two data lakes and stream through kafka and process them in 3 pipelines using apache spark. The generated results from 3 pipelines are directly written into Again kafka brokers. As soon as kakfa receives processed results, a listener write result into firebase. Gui part involves fetching result from firebase and show them in website.	https://drive.google.com/file/d/1EXh28ylwqyszB4u9TnwJrKvYRj7ijMwT/view?usp=sharing	1- Apache Kafka 2- Apache Spark 3- Firebase 4- Pycharm 5- Databricks 6- Google Colab 7- Anaconda 8- Angular 9- Intellij idea
53	Contract Drafter With ASR in Urdu	Developing an ASR for Urdu and back-end android application for property dealers (short meetings). The calls transcribe into urdu text and in an end a draft shall be generated for the deals.	https://drive.google.com/file/d/1AammdB80otCro65PAf131y_Rv-OMGVOJ/view?usp=sharing	Kaldi, Google Collab, Jupyter Notebook, Python, Android studio, Java, Jitsi API, DropBox API, Git
54	SpeakCV	SpeakCV, is an automatic CV generating system for native Urdu speakers that gets information from speaker's voice and generates a professional CV. The user will answer a few questions in Urdu and user's speech data will be sent to a speaker independent ASR for speech recognition. Once speech is recognized, it is then corrected using Language Model. The corrected transcript is then translated to English. After text translation, our system will extract CV specific data and display it on a professional CV template	https://drive.google.com/file/d/10lSQ_X3Xy8EdiaApEz0piT5gA5-8sS7Z/view?usp=sharing	DeepSpeech2,TensorFlow,NLTK, React, Node.JS, Django

55	Automatic Speech Recognition for Urdu	Project aims at providing call transcription by not only doing exceptional continuous speech recognition but also the identification of multiple speakers using various Natural Language Processing (NLP) techniques. Sentences. The user will speak or provide audio and the website will provide the text of the spoken words. This will help users to further store and use the transcribed data and apply other Natural Language Processing techniques to obtain meaningful data.	https://drive.google.com/file/d/14g4GLO8eHqDcGaULZ53rcizaP3lx6_WP/view?usp=sharing	Kaldi FrameWork,Git,Flask,Python
56	Interactive chatbot for admission inquiries in roman urdu	we developed an interactive and intelligent chatbot that understands and gives dynamic responses to students' queries in Roman Urdu. Our chatbot can handle different spelling variations of Roman Urdu words, detect offensive language, handle out-of-scope questions, asks follow-up questions and remembers the context of the conversation. We used the RASA framework for the development of our chatbot and we got an average accuracy of around 94% and an average F1 score of around 84% for all the user intents. It handles questions/queries falling in more than 50 different categories	https://drive.google.com/file/d/1nJHHEqBxsszDneA58GmamWLcuCRRPj75/view?usp=sharing	Python, RASA, PyCharm, gitHub, React, Colab, Machine Learning, NLP
57	ShopSpot	We made a Web application in MERN Stack, named ShopSpot, for people with busy routines to have their own personal clothe recommender which recommends according to user's preferences and interest. The main motivation behind creating this application is to help people struggling with finding their clothes according to their preferences.	https://drive.google.com/file/d/1YNM91yRRdJ9OW7Dg23sZsQn_Ds9I0kLy/view?usp=sharing	Python ➢ Machine Learning ➢ Reactjs ➢ Node.js ➢ MongoDB ➢ Beautiful-Soup ➢ Visual Studio Code.
58	Augmented reality in Kindergarten	We developed an android application that uses augmented reality (AR) to help children in pre-school improve their understanding of the environment around them. We aim to achieve this goal using computer vision and machine learning. 3D models will be displayed by implementing scene and object detection. Children can acquire information about their surroundings by using their smartphone's camera. The application is makes use of our trained models to perform object detection and generate 3D models of the concepts being taught in their books. Moreover, the application make use of high contrast colors, animated text, and speech commands so it is easy and intuitive for the children to identify the application's features. Scene detection will make use of neural networks, relevant machine learning algorithms, and classifiers.	https://drive.google.com/file/d/1jivW-s-dBJeOWyur1Hd8xc8Ay7N30UrD/view?usp=sharing	Android studio, AR Core, Firebase Database, VGG 19 Deep learning model
59	TryItOut	TryItOut is a platform where users can virtually edit and try out garments. The project has multiple features such as TextureMod, where people can provide the input image of the garment and they can map the texture of their own choice on that garment. In TailorMod, the user can map the neckline of one garment on the other. In GarmentTransfer, the user will provide a picture of themselves and of the garment they want to try, and the garment will be realistically re-rendered on the user's body. In MotionTransfer, the user can try out the garment by providing their video as well.	https://drive.google.com/file/d/17rcutat7IcAEV0fBsFC8nhn67MKyz9UN/view?usp=sharing	Computer Vision, Image Processing, Machine Learning and Flask
60	DigiLab	DigiLab is an Augmented Reality based application that enables students of Secondary Level to do their lab experiments of Physics using just their Android phones. Using AR, we aim to digitalize the labs so that the information can be overlaid over the objects anywhere in real-time to give direct understanding of physics concepts. DigiLab will aim to revolutionize Labs/Practical in the Education Sector. There will be selected experiments according to the latest curriculum of Secondary Level's Physics Practical. It would supplement current pedagogical materials by simply adding more contextual experiences.	https://drive.google.com/file/d/1p6AOjORED3vFe_dpUIQlq4IpKzYn85tt/view?usp=sharing	Blender, Unity 3D, AR Core, C#, TensorFlow
61	TrueDetective	(1) TrueDetective is an intelligent system that finds a person through their face. (2) The face of the person may be bare face or disguised. (3) Their are 4 disguises in the data (face mask, glasses, fake beard, hats) (4) The recognition is done on CCTV images and videos. (5) The data is self collected images from cctv point of view. (full info on github)	https://drive.google.com/file/d/1uMSv7k6JHXDV8QZ3PYBvCmCuXRaBzIEq/view?usp=sharing	python, opencv, keras, scikit-learn, colab, Matplotlib, TensorFlow, flask, html, css
62	ARoute	ARoute, is an Augmented Reality based indoor navigation, which provides an organization to increase their services, i.e. by providing an indoor navigation of their users. It will provide the user to act as an organization, in order to scan an area, and implement indoor navigation on it or to use indoor navigation of the requested area. The app will build the indoor map using Apple's ARWorldKit and will show the shortest route from sourceto destination using Augmented Reality objects.	https://drive.google.com/file/d/1UPrKe1uhRNX6LgtCl9dJ493CDtFB070r/view?usp=sharing	C#, Unity, iOS, ARWorldKit, and Firebase
63	Fast Sports System	System that manage sports related activities in university.	https://drive.google.com/file/d/1cN8eobGGtlG8dX2lOcAe0zM6MlLiMJXR/view?usp=sharing	Firebase, Flutter, Angular, Node, Express, mongodb, Android studio

BS-FYPs (Spring-2020 - Fall-2020)

S. #	FYP Title	FYP Highlights	Link to the FYP Report
1	SCIENTO-VISUALS	Sciento-Visuals is a dashboard-based web application that provides users a platform for extracting versatile and dynamic Scientometrics and the prediction of Scientometrics using Smart Visualizations. An interface is provided to perform customized queries, which are used by researchers and officials responsible for scientometric-based decisions. **Tools, Languages/ Technologies:** XML, CSV, Python, MS SQL Server Management Studio, MS Shell, Power BI Cloud Service, OLAP Cube/ Web Application, DBLP dataset, ETL, Data Warehouse, OLAP, Data Mining	https://drive.google.com/file/d/1hYPduJkvV80f5ZOmlSwPan2SKE0VnI56/view?usp=sharing
2	MapVenture	This project aims to develop a game that will provide each player a unique experience and will give them a reason to play it again and again. MapVenture can be summarized as follows: **1. Generation of Unique Level** Dynamic levels with aim to give unique experience to each player **2. Generation of levels with different design elements.** This part concerns with the designing of different elements like shape, sound, color scheme and background. **3. Variable difficulty according to player expertise** Gathering the data from the gameplay of the user into adjusting the difficulty level dynamically and keeping an aspect of challenge throughout the game. **Tools, Languages/ Technologies:** Unity, Python, C#	https://drive.google.com/file/d/1LILxCKlOaEOGd39tus_uAvkJHLI11r2Z/view?usp=sharing
3	What'sNow? Personalized Recommendation System	Personalized Recommendation System provides the user with a platform that would be able to recommend him movies to watch as per his interest and recommend the user about the movies in a specific category. Keeping in view the busy schedules and timelessness of audience, this recommended system will auto fetch the data of same category like if someone searches a movie, season or a book which lies in the category of fight, crime and fiction, the system will auto recommend the content of same category and most importantly, the advertisement will also be given according to the cache. **Tools, Languages/ Technologies:** Python, Anaconda, Selinuim, Beatiful Soup, Numpy, Scikit	https://drive.google.com/file/d/1priMYkMRkAX7seFg6qQmiyMKHNsXMojz/view?usp=sharing
4	Fit-me	Fit-me is an application with an integrated intelligent Chatbot, helpful in recommending clothes according to the user's personal preferences which best fit their body types and saves them a lot of time and effort. It can be used personally by any gender (male/female) interested in knowing their correct size according to their body type. It can recommend clothes according to sizes and personal preferences, but does not deal with 3D models for clothing testing. **Tools, Languages/ Technologies:** Python, RASA, Anaconda, HTMLz, Google Cloud Platform, Flask, Logistic Regression, K Neighbors Classifier, Random Forest Classifier.	https://drive.google.com/file/d/1hFk94Az6qJH0TAs33Fwx9joHSU_xtV8M/view?usp=sharing
5	VSEEK "Video segment localization Via language query"	This project is currently aimed at localizing different segments of the videos based on the different content contained within. This will make searching for the desired contents much quicker. The main idea of the project includes cideo captioning based on events happening in the video, a video search engine capable of searching videos queried, highlighting the video status bar for visual depiction of the desired content, and navigation through the video on the user's preference of desired content. **Tools, Languages/ Technologies:** Xamp, Php, Python, SQLite, RESNET 34, Python, JSON	https://drive.google.com/file/d/1oOXIRJqOkw7qWfxtSnUyxM31S89KJYlh/view?usp=sharing
6	ConVet "A Platform to Connect Retired Personnel"	ConVet is an intelligent system which aims to provide a social platform for retired professionals to give the positive vibe of life. It is basically a social platform for connectivity. Apart from connectivity, users will also be able to create a professional profile, build a better network by posts, comments, chatting and connecting veterans and organizations, starting new services, and sharing thoughts among closed people and in public. **Tools, Languages/ Technologies:** Html5, CSS, Angular, Express, Bootstrap, JQuery, Visual Code, Visual Studio, JSON, API, MONGODB	https://drive.google.com/file/d/1TSlc6VrnaTGDvEOi1BE1bAQUbJzDvBr2/view?usp=sharing
7	Movie Dock "Online Movies Recommendation Website"	Movie Dock is an application which provides the movie recommendations to the user using his ratings and reviews. The project is based on user personalized movies, user's emotional profile building from given reviews and movie's profiling based on their topics extracted from genre. Emotion based recommendations on hybrid approach are given through collaborative and content-based filtering. **Tools, Languages/ Technologies:** CNN, LSTM	https://drive.google.com/file/d/1ZSZ1xy76r8HEPRZGpbrxh_ZO46ge-oDo/view?usp=sharing
8	VisioAssist	VisioAssist is a project that builds an application that helps visually impaired persons to better perceive the environment around them. The project makes use of computer vision software to implement scene detection. The project also heavily relies on Optical Character Recognition (OCR) to identify English language and numerical text. The application makes use of high contrast and big text so that it is easy for the visually impaired user to identify application features. **Tools, Languages/ Technologies:** OCR, Neural Network, Machine Learning	https://drive.google.com/file/d/15Q7U21GG4vOhICsqYqvYUwDBO_-kAuVA/view?usp=sharing
9	Vital Sign Prediction	Vital Sign Prediction is a system where a patient can monitor the vital signs by wearing a smart wearable device and with application to process the vital signs data. This is done so that when the person-situation gets critical, a timely action can be taken to save a person's life. The data which is collected from the smart wearable device is sent to the mobile application and that sends the data to a server or cloud. The server responds to the application in the shape of an alert if the person's condition gets critical. **Tools, Languages/ Technologies:** Andriod Mobile App, Machine Learning	https://drive.google.com/file/d/1NuJJxgfqrmqwmctGpko-sLjJQ5Z56DVZ/view?usp=sharing
10	FAST ACCESS	FAST ACCESS is an AI based Android/Desktop application that helps students and teachers of FAST University in communication, management and synchronization. The app has three kinds of users; students, teachers and the admin. These users will access the app through their accounts. The app helps in generating a timetable feasible for everyone. The app provides the admin with the facility of allocation of rooms for rescheduled classes and meetings according to their availability. The app is beneficial to students as they can select a clash free timetable as well. **Tools, Languages/ Technologies:** Flutter, Firebase, SQLite, ML Models, Python, .NET, Visual Studio	https://drive.google.com/file/d/18zxBG1RCinKSql0_ngQEwjmKTS-MGqh6/view?usp=sharing
11	Multidimensional Analysis of Diabetic Retinopathy using Image Processing (MADRIP)	MADRIP is a system that focuses in aiding the diagnosis of diabetic retinopathy and identifying its stages, enabling the eye specialists to have pointers to focus on the affected areas so that they can provide the appropriate treatment before further complications. The visualization of the disease trends in the analytical report helps the concerned authorities to help control the disease. **Tools, Languages/ Technologies:** Image Processing, Hadoop, Web Development, Feature Extraction	https://drive.google.com/file/d/10v_sauk-eqfgIVnfx2ESOlM-0S5ZBhZr/view?usp=sharing
12	MOSS	MOSS is an android app that focuses on real time surveillance using everyday smartphones by detecting life threatening scenarios using the smartphones' cameras and notifying the user via an internet connection. **Tools, Languages/ Technologies:** RCNN ResnetV2, Firebase, Tensorflow, Anaconda, Android	https://drive.google.com/file/d/1jPCUOA9oFexaEvvnZaUZj1GLAfHXoI4/view?usp=sharing
13	A.B.C App	A.B.C App is an AR Based Coloring Application which allows children to have a real time view of their coloring through 3D models. This application is for kids of ages 4-9, for their interactive learning, enhanced cognitive abilities and enjoyable experience by allowing the children to have a real time view of their coloring through 3D models. **Tools, Languages/ Technologies:** Android, AR Model, 3D Objects Modeling	https://drive.google.com/file/d/1DFDmnLiU00ojdjN0us0Tr7FmQYyQdj2r/view?usp=sharing
14	PhysioFit	PhysioFit is an application that will assist new users with their workout via helping them correct their posture for each particular exercise, as well as assist patients in doing rehabilitation movements, as per instructed by the doctors (via maintaining a client server framework. The problems that are being focused on in this project are exercise routine, correction of posture, and virtual rehabilitation planning. **Tools, Languages/ Technologies:** Tensorflow, Java API, C++ API, Android Neural Netwrok API, Android	https://drive.google.com/file/d/1O9eprvFHz94zzbsKaTOcn_T4RJsUIJo1/view?usp=sharing
15	Smart Buddy	Smart Buddy is an android application which provides a learning environment to the students. A senior student can teach a junior student physically (offline) as well as virtually (online). A junior, through this application can see a list of senior students who are willing to teach and can hire the one who is available. Both the students can communicate directly through Smart Buddy. They can decide the location and time through application. A senior's performance will be evaluated by the teachers who are linked with Smart buddy. **Tools, Languages/ Technologies:** Android, SDK Tools, Git, Github	https://drive.google.com/file/d/1F56_9r7iUO-myUth4kwelCvsuv3sS61_/view?usp=sharing
16	FarmEase by using IOT devices	This project is based on designing a real-time system for the FarmEase by using IOT devices in agriculture that would ultimately provide easy monitoring and better production of crops. This is done for the better sensing and monitoring of wheat production which will be monitored with sensors integrated with application. **Tools, Languages/ Technologies:** Pycno Sensors, SenseH2TM, Python(Tenserflow) Sockets, Android, MySQL, SQLite, JSON, PHP, GPS, Camera	https://drive.google.com/file/d/1C1ziUfG1NDOth4Yi3baxLOjMpbpVeO3z/view?usp=sharing

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S. #	FYP Title	FYP Highlights	Link to the FYP Report
1	Decentralized Governance of Smart Transportation Using Blockchain	The project is currently aimed towards detecting urban damage to ensure efficient flow of traffic in order to make cities safer and more secure. It is a data driven platform to make smart cities safer using the latest technologies to help create a smarter, more efficient and safer transportation system, that detects and reports road related damages to ensure public safety. **Tools, Languages/ Technologies:** Python, Android, Tensorflow, Ethereum, Ganache	https://drive.google.com/file/d/1gRF8FRXJ11--m3j_tVyfmcvuaMKGBCbh/view?usp=sharing
2	FLEXCHAIN	FlexChain is a custom built permissioned blockchain which allows a university to manage its students' grades and marks within a decentralized blockchain. It aims to develop a solution which is blockchain based where marks and grades are added in a block and re-verified and added to the immutable block chain. **Tools, Languages/ Technologies:** NodeJS, Atom, GoLang, Html, CSS, Bootstrap, Blockchain	https://drive.google.com/file/d/1Ew3NYh4vOwHXGkciwjWS-ExU0h07PNuW/view?usp=sharing
3	SitAR "Improving Situational Awareness using Augmented Reality"	The project aims to provide a system that consists of a database that manages the retrievals and fetches of data dumped in it by the sensors. This data is then acquired by a mobile device which through the use of AR displays it to the user's screen in a meaningful way. **Tools, Languages/ Technologies:** AR, MongoDB, Mapbox, Swift, XCode	https://drive.google.com/file/d/18SqtE14oQHtEIYi2XCBsK-j_1LkwMqT9/view?usp=sharing
4	SPECTRE	This project includes the 3D Visualization of macromolecules involved in the drug creation process i.e. proteins and drugs along with the display of interaction and the energy calculated at orientation set by the user according to his/her hand gestures or the VR headset controllers. The project aims: 1. To precisely orient the molecules according to the user's gestures. 2. To save money spent on experiments during the drug discovery process. 3. To grab, rotate, or enlarge molecules and measure distances or angles between atoms. 4. To use Virtual Reality, a tool meant for gaming purposes, for a medical cause thus opening up new uses of the technology. **Tools, Languages/ Technologies:** C#, Visual Studio, oculus, C#, PubMed, PDB	https://drive.google.com/file/d/1OZsELY00U_C9xPsjdJjyXfRiargJYC72/view?usp=sharing
5	Customer Attrition Analytics	The project is to design and develop a web-based business analytics application which, as the name implies, uses machine learning and business intelligence techniques to find the patterns in the customer turnover data. A dashboard UI visualizes the data using appropriate data visualization techniques which assists an organization in retaining its original customers. The focus of this project is to retain original customers for sustainable customer base growth instead of acquiring new customers. **Tools, Languages/ Technologies:** Plotly, Python, Scikit Learn, Bootstrap, Dash	https://drive.google.com/file/d/1JZodjLkmt0K8hjD1-Q0V56vfPlajF0Ku/view?usp=sharing
6	Mining Dynamic Social Networks	There is a critical need to summarize large graphs into concise forms that can be more easily visualized, processed, and managed. This research and development project proposes the need to study these graphs deeply, summarize them so that they become precise and find in them the different patterns of connectivity which can be further used to understand human behavior. This project initially uses an algorithm known as TIMECRUNCH, which summarizes graphs, extracts patterns, stitches patterns over time and then displays them. It further compares the previous results with a new proposed algorithm to get better results. **Tools, Languages/ Technologies:** Eclipse, Java, SNAP, GS, Data Minig	https://drive.google.com/file/d/1-ACh3ysaNvIDCvdpK7R3JUqMV96SgTZA/view?usp=sharing
7	Salah Tracker	Salah Tracker is a mobile based application that monitors the activities of a Muslim in each Rakah using sensors of a smart watch. It informs the user about the time spent on each activity during each Rakah and if each activity was performed correctly during Salah. The user would be informed about the average time spent on each Rakah and if he has missed any Rakah. In addition, along with the Salah timings, users would be informed about the prayers performed all day. **Tools, Languages/ Technologies:** Android, Firebase, Java, Python	https://drive.google.com/file/d/1-q-A9NnrWfMdxtJq01lYgFgZQZnbP4RK/view?usp=sharing
8	VEDS Vantage: Easy Data Science	VEDS (Vantage: Easy Data Science) is a graphical tool over Vantage designed for Teradata which uses Teradata's SQL, Machine Learning Engines to perform data science operations. It integrates Teradata's Machine Learning Algorithms which execute in-database. In-database execution performs exceptionally well over the traditional in-memory execution since DB engines implement transactions, which are much more fine-grained than most "in-memory" approaches to managing persistent data. VEDS is developed keeping in mind the advantages of in-database execution, so that it can perform better than the other tools which execute algorithms in-memory. **Tools, Languages/ Technologies:** React, Python, Python Web Framework, Teradata's Machine Learning Engine, R Programming, SQL, Vantage	https://drive.google.com/file/d/1B8EWura5SdgoAOO9ShsdJDYLgWdz38KI/view?usp=sharing
9	Autonomous Game-Playing Robot	The objective of the project is to create a robot that can autonomously play chess against a human player. The players interaction with the robot is limited to only starting a game and performing moves. Everything else is handled autonomously. The software is also structured in such a way that the robot can be made capable of playing other board games with minimal changes, barring those that relate to the specifics of a particular game. **Tools, Languages/ Technologies:** Android, Firebase, Java, Python	https://drive.google.com/file/d/1-0o-vBF1Rn2xJU5Hwkbuy7kLv9ZSZ1JN/view?usp=sharing
10	Summix – An Automated Privacy Policy Analyzer and Summarizer	Summix is an tool for Automated Privacy Policy Analyzation and Summarization. It performs Extractive as well as Abstractive (Human like) summaries to devise a solution for the people who use websites, applications and softwares but do not read their privacy policies and end user agreements despite being very much concerned about their data safety. It enables its users to automatically generate summarized, concise and precise bullet points out of the Privacy Policies and end user agreements. It is basically a guide for the user and development team so that they can have an overview of what is the software all about. **Tools, Languages/ Technologies:** Python, Android, Tensorflow	https://drive.google.com/file/d/1U490_oJAj7L0oSOQoaq0T_9zO4X1NzJJ/view?usp=sharing
11	FINE PRINT Privacy Policies and Cyber Laws	The aim of this project is to enable users to check privacy policies against data protection laws. It handles two laws: GDPR and PDPA. Binary models are used for classification for each category. The models include Logistic Regression, Support Vector Machine, and Pre-training of Deep Bidirectional Transformers for Language Understanding (BERT). The use of F1 score is done for evaluation. **Tools, Languages/ Technologies:** Flask, Spacy, Github, NLTK, Python, Keras	https://drive.google.com/file/d/1hQVUg9Jyr7umcZED72ep9vuFm20iurtN/view?usp=sharing
12	Pakalo – Artificially Intelligent Cooking Assistant	Pakalo is an application that contains recipes and has a chatbot. The chatbot uses speech and text input from its users and understands it to be able to find recipes, go step by step throughout the recipe alongside the user, suggest recipes according to the user's interests and the limited ingredients a user has, mention ingredients that are required to make a particular recipe, suggest halal substitute ingredients for recipes with their opposite counterparts and more. **Tools, Languages/ Technologies:** NoSql, Python, Keras, Github, RASA, Spacy, Java, Android	https://drive.google.com/file/d/1VSLqXQXr7kJBEANOEXIujJ4mcECbjFX_/view?usp=sharing
13	Trek Siri Traveling made easier	Trek Siri is a product that assists travelers in making their trip the most memorable one. It helps travelers in choosing what kind of clothes to pack based on their destinations, temperature at those places and even what hotels are the best to stay in while they are there. The project only deals with the northern areas of Pakistan and does not deal with the itinerary planning or the management aspect of trips. **Tools, Languages/ Technologies:** NLU, RASA	https://drive.google.com/file/d/144_g0oG1DOGLGfBp-RIr8EvmAh8OrLzQ/view?usp=sharing
14	Neo – AI Conversational Agent	Neo is a project that intends to build a conversation expert with personality which is able to chat on various topics, with its conversation consistent to its persona. Agent that can chat with humans in the way that people talk to each other will be easier and more enjoyable to use in the day-to-day lives — going beyond simple tasks like playing a song or booking an appointment. **Tools, Languages/ Technologies:** Python, NodeJS, Pytorch, RASA, React Native	https://drive.google.com/file/d/1L3XTaQLlGiYLkLmJ8tLlPKRAJ817PBqJ/view?usp=sharing
15	SecureJS (JavaScript Automated Vulnerability Exploit Tool)	SecureJS is a tool which can find vulnerabilities in a given code of JavaScript or in other words can be called a JavaScript Automated Vulnerabilities Exploiter. The vulnerabilities is a tedious task for human beings as they have go through the code line by line or use static analyzers, on the other hand, deep machine learning is well suited for this problem as if we can teach the program how a vulnerability behvaes and looks in code. **Tools, Languages/ Technologies:** Python, MongoDB, Django, Tensorflow, csv, tokenization, javascript XSS, vector, Google Colab, code2vec, codeBERT, id2vec,word2vec	https://drive.google.com/file/d/1-qywHjN81TQlPpByGb89v_e2SYKGxcEp/view?usp=sharing

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S. #	FYP Title	FYP Highlights	Link to the FYP Report
16	WordsInAction	"Words in Action"is to automatically convert the natural language into animation. A desktop application that would help people to visualize the written scripts and scenario to have a clear image of what is written. The main objectives of WordsInAction project are Parsing the script into sentences, Handling complex sentences, then to train a model for the extraction of semantic actions from the given scripts. From the giving sequence to the extracted actions and mapp the action on the character. **Tools, Languages/ Technologies:** Unity 3D, Python, C#, Github, Natural Language Processing, Text Processing, Extraction, Character retrival, MappingNLTKL, Animation, Testing.	https://drive.google.com/file/d/1j_sS0GdxqqTSXV9-DnDZphiQx7u54goK/view?usp=sharing
17	SMART BILL MANAGER	The purpose of this SmartBill to collect, analyze, and define high-level needs and features of the Bill Man. It focuses on identifying and agreeing on the problems faced by people in handling, managing and storing their bills, and further the effects of those problems on productivity and efficiency. Further the solution is proposed which is a smart bill manager called Bill Man and consequently its benefits. **Tools, Languages/ Technologies:** WAPDA Bill dataset, Image preprocessing, Image localization, classification, Tesseract OCR, VGGNet Classifier, YOLO, OpenCV, Firebase Cloud, NoSQL, jSON, Android Application	https://drive.google.com/file/d/1TssKBUQtZfLwShLvdndWnn8K4chV63-e/view?usp=sharing
18	Vehicle Surveillance Using Blockchain	The purpose of Vehicle Surveillance Using Blockchain is the use of a decentralized structure that spreads the control power among the involved organizations, while maintaining transparency, security and decentralization. We created a system with the use of blockchain, to achieve the surveillance and management of Vehicles or Unmanned Aerial Vehicles. This system provides a digital contract in order to facilitate a secure drone or mobile vehicle journey that is feasible to the drone holder, and authenticated and verified by the involved authorities. **Tools, Languages/Technologies:** React Application, IoT Device, Webserver Express, WebServer IoT, Bloackchain. Sensors, Trilateration, ESP32, LM298H Bridge, DC Motor, Arduino UNO, Bluetooth,	https://drive.google.com/file/d/1yGwKohqJVrFsVLED0ioVQkkhlJ6GbpW5/view?usp=sharing
19	KARAVAN Smart Traffic Flow – Design and Formal Verification	The purpose of KARAVAN is creating an IOT based car that will assist drivers using sensors, Indoor Positioning System and image processing. It will also consist of an Android application that will allow the users to monitor the caravan. Moreover, the project will be formally verified using model checking. Modules of this project will include localization, processing the camera stream on the servers, a car following the white lines and operate according to commands, a GUI for continuously observing the location of car and the KARAVAN **Tools, Languages/Technologies:** Autonomous Cars, Formal Verification, Validation, UPPAAL, IAR VisualState, Model Checking, Indoor Positioning System, Arduino, ESP32, Image Processing, Internet of Things, Microcontrollers, Machine Learning, Smart Traffic Flow, Verification & Validation, Assurance Technologies, Software Testing.	https://drive.google.com/file/d/169CwFKNItD1atvEnploZiEA7lyClAxoL/view?usp=sharing
20	Indoor Pilot	IndoorPilot is a software that gives you the ability to map your buildings and share the map with anyone to help them navigate indoors. It includes select a building with abundant WiFi access points, upload a map or design a map using this tool. It will collect necessary information to enable indoor navigation for the building. Select a destination and let IndoorPlot guide you. **Tools, Language/Technologies:** VScode, NodeJS, MongoDB, AngularJS, Android Studio.	https://drive.google.com/file/d/1bc4F0AHHZfUbxTJEQCyl4DdZNx6u8Tt9/view?usp=sharing
21	Modeling Internet of Things behavior with Business Process	The goal is to support business process management using IoT information for both technical users and business users, by providing a notation that is intuitive to business users, yet able to represent complex process semantics. The business process has four components; events, activities, gateways, and connections. Your business process must have a start event, 2 script tasks, and an end event. **Tools, Languages/Technologies:** Eclispe, ESP32, Arduino UNO, Java, C++, JBPM, IoT, API, DHT11, Bluetooth,	https://drive.google.com/file/d/119wuAyXfGXzn-iwAVhBJlGYKXP4qL4mA/view?usp=sharing
22	AUDIOBOT	A user specific android application that simulates an intelligent conversation with its users in natural language. It includes application speaks, user listens or vice versa. All natural language processing and data services are between system and user. Audiobot learns more about the user by accessing users' private information and public data from call logs, text messages, location and Twitter profile. **Tools, Languages/Technologies:** Python, Android studio, Aimybox, RASA, Webscrapping, Conversion API, Firebase, Context Generation, Data modeling, Database handling	https://drive.google.com/file/d/1P6OK1rNaxMm2N-GZnORv4l0MaiJAum6T/view?usp=sharing
23	speech2face – Speech recognition based on facial images	Speech2Face comprises of multiple deep neural networks with an aim to learn the correspondance between facial and vocal features of humans. The model isused to construct a human face from merely an audio sample. The reconstructed face is matched with user provided facial images to give a positive person identification match. **Tools, Languages/Technologies:** AVSpeech and VoxCeleb datasets, Python, Anaconda, Google Colab, Pytorch, Facial Decoder, Audio Waveform, Voice Encoder, 4096-d Features,	https://drive.google.com/file/d/1se0L_-sUdBG_UbTAO-Z7tF0laLiJNzxl/view?usp=sharing
24	DeepAL – Deep Learning for Assisted Living	DeepAL classifies human activities such as human falling and human choking in order to detect the problems which are most specifically faced by elderly people. The model proposed by this project uses the data which has been augmented by adding additional features introduced by the face, hand positions and key-point models. We tackle the task component of increasing the accuracy of a model by training it on a small and structured dataset through data augmentation. **Tools, Language/Technologies:** Python, Tensorflow, OpenCV, Deep learning, Neurl network, face, hand and pose detection	https://drive.google.com/file/d/1-9hOOqwrZeByETgejJNsbiqo3yM6trxB/view?usp=sharing
25	IMGEN Image Generation through GANs	IMGEN contains the findings of the research conducted on GANs to produce synthetic images. Our aim has been to identify gaps, and study literature to propose our project methodology. Later part of the report contains our findings, results and proposed methodology. **Tools, Languages/Technologies:** Python, flask, web development, Keras, HTML, CSS, User Interface, feature selection, static and variable image generation.	https://drive.google.com/file/d/1mG0HuJqzcNpTeCljBEAIR-UQKBIcQ3Ho/view?usp=sharing
26	VividUS	This project will be focusing on the development of an application aimed at the assistance of the visually impaired through the techniques of image processing primarily and machine learning and data mining secondarily. After the object has been detected, the application will be able to identify the estimated distance from the subject. Reporting back to the user via audio output Once all the algorithms of object classification and distance estimation is done the feedback will be given back to the user via audio output. **Tools, Language/Technologies:** Python, tensorflow, tensorflow Lite, openCV, Android studio, object detection, UI/UX, feature extraction and classification, COCO SSD MobileNet, image annotation, Labelling Map, HCI.	https://drive.google.com/file/d/1ycZbqGSpd6katvU7rfUAaW6OBnsXeJsW/view?usp=sharing
27	Malicious Application Detection	MalwareDetect, Firstly, analyze the relationship between system functions, sensitive permissions,and sensitive application programming interfaces. The combination of system functions will be used to describe the application behaviors and construct eigenvectors. Subsequently, based on the eigenvectors, we will compare the methodologies of naive Bayesian, J48 decision tree, and application functions decision algorithm regarding effective detection of malicious Android applications. MalwareDetect is then applied to test sample programs and real-world applications. **Tools/Languages/Technologies:** Android Studio, Python, Java, SQLite, Data gathering, Model Design, Front & Back end integration, Real time Analysis	https://drive.google.com/file/d/1kjKEXlsd8PhjoDsO08HWkc05lKVgzmuR/view?usp=sharing
28	Share n' Care	Nowadays, if someone is new in any city, he does not has interaction with people. If he wants to eat or share books with new people, he can't. There is no platform or application where he can interact with new people. Share n' Care is an application through which unknown people can interact with each other and mshare food and books. Through this application, unknown people can notify each other if they want to eat food at the same time at the same restaurant or share books with each other. **Tools,Languages/Technologies:** android studio, jupyter and MySql, NodeJS, Python.	https://drive.google.com/file/d/1hg4BMOkpJPgkV7_id7FM2VEkNQprGmmJ/view?usp=sharing
29	FASTalk (AcademicBot)	To implement the idea of generative chatbots for academic purposes, we have integrated systems like Slate and the official website of the university (nu.edu.pk). Our study proposes to investigate how generative context based chatbot can be made using Deep Learning and NLP techniques. By using these techniques we will build generative context based chatbot that can produce better Natural Language responses closest to Human Language and works on a small dataset as Slate and NU website would be the only primary source of our academic data. **Tools,Languages/Technologies:** Doc2Vec, Encoder Decoder based LSTM, deep learning,, text classification, embeddings, keywords, BLEU score, Informativeness.	https://drive.google.com/file/d/1Zs-ycPw33PSBtH-fYRsI5bLKwneOnNAM/view?usp=sharing
30	Visual Object Labelling Assistant	The Visual Object Labelling Assistant is a dataset creation tool which will revolutionize the way datasets are created and annotated. The application will be user-friendly, scalable for large work forces, easy to use/ learn and intuitive. This problem is more pronounced in the case of satellite imagery data where images are very large in both size and quantity, and contains many objects of interest. To solve this problem, we propose the Visual Object Labeling Assistant. **Tools,Languages/Technologies:** Artificial Intelligence, annotation, labels, image dataset, Django-rest backend server, React development server (hot-reload), Instance segmentation, Fine-tuning, image embeddings, vertex embedding, feature extraction, polyTransform	https://drive.google.com/file/d/1PpmZiR13aTukcwFE64ZDXSlMygM2Ea8R/view?usp=sharing

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S. #	FYP Title	FYP Highlights	Link to the FYP Report
31	Hate speech detection and classification using deep learning.	The problem is that there are many sites and social media platforms who want to restrict and block specific type of hate or discriminating content. And by further categorizing the type of hate speech or discrimination which will lead to detection, removal and control of hate speech. For example, the tension between Pakistan and India many politicians are spreading hate content on the social media. As a byproduct we will find the intensity of the hate speech in tweets of different famous politicians so we can conclude which people are spreading more hate in the region and raise voice about the politicians **Tools/Languages/Technologies:** Datasets (WZ-L (wassen), WZ-S.AMT, WZ-S.EXP,WZ-S.GB , WZ-ls, Rm), Tweets dataset, Word embeddings, word2vec, deep learning , Python, Keras, Flask, Google, Colab, classification, neural network, tweet encoding, LSTM, Max pooling concatenation, F1 score, CNN + GRU	https://drive.google.com/file/d/1EwyXY6m2LA1g0yqn9zmzhlLE_VD1kaPv/view?usp=sharing
32	PakTouring Expanding Horizon	PAK Touring is creating a personalized itineray using a recommendation system with customization options according to the user needs. So a web portal is a solution that helps you with all the ambiguities. For the working this portal will take basic parameters as inputs: Number of days of stay, Budget, type of trip, Number of people, Destination, date etc. This recommendation system will be very helpful for tourists not only from within the Pakistan but also from outside of Pakistan who want to explore and fulfill their adrenaline rush. **Tools/Languages/Technologies:** Python, Firebase, MongoDB, Node, Angular, databse modeling, front and back end developemnet, model authentication, recommender system, user persona generation	https://drive.google.com/file/d/1mSyDYR8FbL6ntkHK89kjgSbo3W6tMOCV/view?usp=sharing
33	JAIZA Early Prediction of Heart Disease using Lossless Data	The aim for this research was to identify the semantic data loss that occurs when processing big data in frameworks like Hadoop, and to identify an ideal approach for making disease predictions using a vast size of health records. When considering healthcare documents, this data loss is unacceptable as the information contained within is sensitive and crucial. The effect of this can be observed when making heart disease predictions on the processed data. **Tools/Languages/Technologies:** Big data, heart dataset, prediction analytics, hadoop, python, eclipse, WEKA 3, ubuntu, accuracy, J48, Random forest, SVM, Naive Bayes, PART, NBTree, LMT, LAD tree	https://drive.google.com/file/d/1py3AIEtDupDtLinZZJud0oYgER--0WVo/view?usp=sharing
34	PatwariX Land Registry on Block Chain	PatwariX is a Land Transaction and Registry System based on Ethereum (Block Chain). The system includes record handling of lands, buildings or any real estate related property. Chained data link i.e. history is maintained of all previous owners. Multi signature transactions as a land can't be transferred without the digital signatures of buyer, seller and the authority. Authority can add property initially. The owner is able to transfer his owned lands in separate portions i.e. break a big block and sell. **Tools, Language/Technologies:** Angular, Node js, python, Ethereum, Warehouse Management Sofware, Truffle, Ganache	https://drive.google.com/file/d/1FQw31r_ilk5Z35FtuIzJmNOaGqg0P1Dg/view?usp=sharing
35	Comparative Analysis of Different Word Embedding Techniques	The goal of the project was to train the following word-embedding models for Urdu and Roman Urdu: (Word2Vec,fastText,GloVe,ELMo,BERT) and evaluate these techniques to see how they fare against each other over a set of metrics. The following is a report on the Comparative Analysis of Different Word Embedding Techniques on the Urdu and Roman Urdu languages. To generate word embeddings, Urdu and Roman Urdu corpora were used which needed to be cleaned and pre-processed before they could be used for training. This involved removing adding spaces between words, removing punctuations marks and numbers. The techniques that we evaluated are Word2Vec, fastText, GloVe, ELMo and BERT. Both variants of Word2Vec and fastText techniques (CBOW and Skip-gram) were trained using the implementations provided by Gensim. **Tools/Languages/Technologies:** Word2Vec, GloVe, fastText, ELMo, BERT, Natural Language Processing, Urdu dataset (WordSim-353 and SimLex-999) , sentiment analysis, Named Entity Recognition, PoS Classification, CBOW, Skip-gram, XNLI	https://drive.google.com/file/d/1j_44cBUtW80tXmzAqfQTZ30oNR-Igq6h/view?usp=sharing
36	Rare Words using sub-word Information	This work includes Roman-Urdu to Urdu transliteration which also handles rare word problems by use the state of the art transformer model on tensor2tensor which is a new google library for neural machine learning.The transformer model uses attention mechanism and uses subword information using its own built-in subword technique for transliteration on own dataset that included around 6million sentences for Roman-Urdu and Urdu-script each. We trained for 300k steps with a vocab size of 20k and tuned hyper parameters. The BLEU score we managed to achieve was 82.4 which exceeded our target. The loss function became quite stable after 70k steps. **Tools/Languages/Technologies:** Neural Machine Model for Translation, tensor2tensor, Seq2Seq, Convolutional Neural networks, encoders, decoders, softmax, Transformer, BLEU score, Loss Score, Corpora (Roman Urdu, Urdu script), hyperparameters.	https://drive.google.com/file/d/1p3ZlST8ErgZQJUia5bKYfDeU83dfD-bC/view?usp=sharing
37	TRACES - game	The game will include a simple main interface which is a map with current location pin. The game will allow players to place traces at GPS coordinates and view other traces. Players can replace traces of other people. Players will be scored according to the time their trace remains undiscovered. This score will be calculated by an algorithm that we will deduce. An intriguing gameplay strategy will be designed to motivate the players to continue playing. 3D models will be used from a store and will not be designed by us. There is also a solo mode player option. **Tools/Languages/Technologies:** Augmented Reality, GPS clocation, ARCore, MapBox, User design, firebase, 3D Models	https://drive.google.com/file/d/1XYS4BWJrOsY7XD9jMUDCBEObhwOpWsCj/view?usp=sharing
38	ARCeus - Augmented Reality Game	ARCeus is a multiplayer pokemon fighting game having virtual 3D pokemons on shared real world surface using augmented reality to provide user a whole new experience of real world gaming. The object of ARCeus is Shared Augmented Reality Experience and Realtime collaborative session between two users. it is a multiplayer Pokemon battle on real world surfaces using Augmented Reality. **Tools/Languages/Technologies:** Unity 3D, C#, ARKit 3, RealityKit, Swift, Blender, Vitual 3D Characters, Deventralized peer 2 peer network	https://drive.google.com/file/d/1ETFhIxSpHUAG54IqTEFaTC5T4j5n5JSD/view?usp=sharing
39	iCode	iCode is a project that focuses on the development of a web based tool that processes GUI screenshots provided by a user, and translates them into HTML code for a browser webpage. The project primarily focuses on developing coherent and accurate assistive structures for web development purposes, rather than producing full fledged end user solutions. It is a webbased tool that converts GUI screenshots into HTML code. **Tools/Languages/Technologies:** TensorFlow, DJango, PyCharm, HTML Mapping, Text extraction using OCR, Component extraction using Computer Vision, Webpage Code generation, Contouring, Data labeling	https://drive.google.com/file/d/1Y4mBUlWlHUtelAVD7UtD1bgTCLQGfFLF/view?usp=sharing
40	Wandering Minds	It is an end-to-end game for a particular coding concept, at various skill levels. The purpose of this research is to design challenges for users that focus on the improvement of their cognitive skills and provide users with an idea of their progression in programming concepts, using statistics visualized by learning trajectory. Providing users with incentives that help keep them motivated and engaged during tasks is one of the objective of this research. The features are learning meter, learning index and learning rate, gamification and leaderboard. **Tools/Languages/Technologies:** PHP, HTML, CSS, javascript	https://drive.google.com/file/d/1HM6aWr4bKei6TPZ1TCU_VsZwK9HRv1Rp/view?usp=sharing
41	Musheer	Musherr will enable university students to devise a semester plan in the conformance of student advisory guidelines while sitting at home. It is actually design and Development of desktop application for automating and convening the process of Course Advisory using concepts of recommender system. Students and Advisors are the main targeted users. Students of any year will be to use Musheer to help them devise a suitable semester or degree plan. **Tools/Languages/Technologies:** Python, HTML5, CSS3, Bootstrap, website, Artificial intelligence, KNN, collaborative filtering, lazy learning User interface	https://drive.google.com/file/d/1c3qVUS5sq_9KaS-r0HUlobJge3rm58CB/view?usp=sharing
42	Car Bazaar	The purpose of this project will be to develop a chatbot that will provide intelligent insights to potential buyers regarding cars purchased in an interactive chat. The end-goal of the chat will be to convince the user to move towards an educated decision to buy one of the presented options in a hassle-free and convincing manner. The vehicle data will be provided by CodesOrbit of about 3.5 million cars. **Tools, Language/Technologies:** Python, Android Studio, Flask, Rasa, Flutter, MySql	https://drive.google.com/file/d/14QHVqy9-wHDcQjBHwbTiJnLzcFVpcldm/view?usp=sharing
43	Isharay	Isharay is basically a sign language translator which uses mobile camera to detect gestures from the user in front of the camera and then converts it into corresponding text of that sign language gestures and vice versa i.e. it takes some text from user and displays its gestures in sign language on the screen by use of 3d modelling techniques. This application will be mainly used by the deaf community of this world which almost makes 5% of the total population of the world. Moreover, it will be used in : 1. Special institutions for people with hearing disabilities e.g. special care centers , sign language learning schools etc. 2. Firms and Brands who are interested in taking initiatives for such people by making special outlets for deaf people e.g. KFC. 3. By families and friends of deaf people. **Tools, Language/Technologies:** Andriod Studio, Tensor Flow, Python, Unity, XCode	https://drive.google.com/file/d/1We_VECIGNlW0HJ5LxhclHX_9aUrxLdGk/view?usp=sharing
44	Mimic Robo	"The project focuses on developing a system that trains itself on a user's voice. It then uses the trained model to generate voice notes identical to the user's voice for textual input provided to it. We are going to provide a mobile application for this, which will make it very easy for any type of user to make a clone of his/ her voice. **Tools, Language/Technologies**: Pytorch, Python, Angular, MySQL, React JS	https://drive.google.com/file/d/1T6jm08iuqDIgie499qZarwVEfVQJqPch/view?usp=sharing
45	Rel-Event A Predictive Event Finder Application	Rel-event is an event recommendation and searching application which aims to has combine the latest influx of Natural Language processing and machine learning algorithms to open doors for predictive analysis on event searches and popularity of an event. This project aims to scrap live data from event websites and categorize those events into 6 different types such as Sports, Music,Food etc. There will be 2 types of users: 1. Customer 2. Organizer **Tools, Language/Technologies:** Firebase, Python, Android Studio, Java, Github	https://drive.google.com/file/d/1F0sz0URytozBf4PbO36e5L-PAeF_gXU8/view?usp=sharing

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S. #	FYP Title	FYP Highlights	Link to the FYP Report
46	Raspberrycar	This is a smart car device which will work by the voice of user, to make a call, send a text, play music/video and radio, navigate offline and to detect object while the car is in reverse. This device will work offline. This is a handsfree device using Raspberry pi, GPS module, Radio module, Bluetooth module, Voice Recognition and Navit software. Then connect all these modules together and make a python and Qt based application which will provide a GUI and help the user to interact with the device. This device will work with voice commands. **Tools, Language/Technologies:** Raspberry pi, QT, Arduino, Python	https://drive.google.com/file/d/1uzgb--h1tzEv_z7ixyqmuhDnz1EKpltD/view?usp=sharing
47	GUIDANCE BOT	The basic aim of this project is to make a chat bot that entertains students by replying their queries in an intelligent manner by using deep Learning techniques. • The data is gathered through Facebook and manual data writing. • Preprocessing, labeling and cleaning of data through NLP and data mining. • Includes training of our chat bot on data set and making it that much intelligent to give mature and proper answers to keep the user engaged. **Tools, Language/Technologies:** Tensor Flow, Keras, RASA, Slack, Python	https://drive.google.com/file/d/1iBK47avIGlCcBW2w0-8uZB6HoTWT3elX/view?usp=sharing
48	SmartPlot The next generation of real estate	SmartPlot aims to be a system which targets housing societies by providing features such as a highly user interactive map along with other features such as privacy protection and an effective search engine to minimize involvement of third parties such as property dealersIn addition to this, the system will be highly user friendly with a user interactive map, an online bidding system as well as a search engine based on properties such as location, type and areas of plots. **Tools, Language/Technologies:** Java, C sharp, Visual Studio, ASP .NET, Andriod Studio, Google Map API	https://drive.google.com/file/d/1xMb1eqI_qsEay7mMqK60N_HUx1gH-mgP/view?usp=sharing
49	Control Traffic Violation through Blockchain	A web and mobile application that manages traffic challan data and stores it in a public blockchain to bring transparency within the system. . They are decentralised, no one has control over the network, and are secure in that the data can't be changed once validated on the blockchain. This application makes it truly simple to deal with the infringement records and to monitor every one of the infringements that are carried out. **Tools, Language/Technologies:** Truffle, NodeJS, React, Android Studio, Ethereum	https://drive.google.com/file/d/1lHCltODn9sgkwq_ERTXJFVlaR8bnGfGt/view?usp=sharing
50	SENTISENSE	This application would aid them in deducing the mental health of their patients based on their online activity on social media websites like Facebook and Twitter. The professional will feed the patient's text data into the app which will then predict the emotion from that piece of text as well as its intensity. The app will then maintain these records in the database which will then be used for useful visualizations from data of multiple predicted emotions and intensities over a long period of time. **Tools, Language/Technologies:** Python, TensorFlow, Keras, Java, Android Studio	https://drive.google.com/file/d/1IszRsd6GV-SoQngHqQDQHHROdkAobUUf/view?usp=sharing
51	ChildGuard	ChildGuard is an application that will help parents ensure the safety of their children by keeping track of the child's activities, location, call logs, screen time, browser history and key presses. This application will be able to access the internal storage of the child's phone and will run in the background without over draining of battery and overconsumption of processors. **Tools, Language/Technologies**: Android Studio, Firebase, HTML5, Bootstrap, Angular JS, NodeJS, JavaScript, Python	https://drive.google.com/file/d/16OyaaBguPjEpS9SPEOTuHpLXWYbd68gN/view?usp=sharing
52	MarkBot	Main objective of MarkBot: ● Ease the process of marketing and branding. ● To find the target audience for the businesses with the help of AI. ● To put an end to hit and trial methods of running campaigns and finding customers. ● Generate marketing and branding content like posters, logos, marketing copy, and ad optimization. **Tools, Language/Technologies:** Python, JS, HTML5, React Native, TensorFlow	https://drive.google.com/file/d/1WcpYxJvtHIr5xC6wkY2mfBX894XJvCWs/view?usp=sharing
53	Semantically Annotated Tajweed of The Holy Quran Semantic Tajweed	The objective of this development project is to deploy ontology for some of Tajweed (Articulations Points of the Letters, Un Vowel Noon and Tajweed) to support the learning of this part of Tajweed and to facilitate the sharing of knowledge with the other Holy Quran applications. The primary objective is to create semantic annotation for the quranic text on which a search engine will be created where search queries can be performed on tajweed rules, since these rules are currently hardcoded in the quranic text and no semantic searches can be performed, this dynamic data format will be publish in link over data (LOD) format. **Tools, Language/Technologies:** Android Studio, Angular, Java, Node JS, PHP, LOD Cloud, RDF, OWL	https://drive.google.com/file/d/1xEdQ-tzgUXKrVOM_QD9pupAhxTLd_XEL/view?usp=sharing
54	SMART COMMERCE SYSTEM	With the increase of E-commerce trends, the companies in Pakistan are also evolving; therefore the advantage of this project would be to provide assistance in making best business decisions. This platform will be providing management related services and business decisions through analytics in the activities of online trading organizations. **Tools, Language/Technologies:** JavaScript, NodeJS, SQL, Kafka, Cassandra, React	https://drive.google.com/file/d/1esGXm5hepOq5fYDthVUTPsJ23VUaLlZL/view?usp=sharing
55	WordsInAction	The project "Words in Action" is a desktop application that can generate an animation from the natural language automatically. Given a limited description about any scenario the application would make the animation accordingly and would try to visualize the scene. The project is about animating the house robbery stories. Only the stories having the description of house robbery would be converted into animations. Armed house robbery is the main concern of this project. **Tools, Language/Technologies:** Unity, Python, C Sharp, Github, NLTK	https://drive.google.com/file/d/1j_sS0GdxqqTSXV9-DnDZphiQx7u54goK/view?usp=sharing
56	WhatNext	WhatNext is a web application in which an AI chat-bot is incorporated in order to test the personality of the user. This will help the user to choose his/her interested field of study. A knowledge graph will be at the back end of the chat-bot from where it will perform the personality assessment of the user. A search engine will also be available for the user to help them find universities. The user will be able to search about universities by their location, degree programs and HEC rankings. **Tools, Language/Technologies:** DialogFlow, Python, MongoDB, React, Flask, NodeJS	https://drive.google.com/file/d/1tepjSUyNkmi75I6R6fyw1R7FEMePQTtt/view?usp=sharing
57	Navigation Assistance for Blind Persons	The scope of this project is to develop an android application that will help visually impaired people move from one place to another. It will use voice commands to communicate with the user. The user will select the destination and criteria for the route, then the app will use street view to determine best route. The application will use camera to detect poles, trees, patches, walls and fences in the path using image processing and guide the user. **Tools, Language/Technologies:** Android Studio, Java, mapbox, ML kit for Firebase,	https://drive.google.com/file/d/1KePyic1Y3GjntVRdp0pXrb2r5c4YkVM2/view?usp=sharing
58	CatchPhish: Malicious URL Detection on Twitter with Word Embedding using a Deep Learning Approach	This is an R&D based project, main object of this project is the real time classification of URLs as malicious or benign based on machine learning techniques. This mechanism provides good accuracy in detecting malicious URLs to protect the private data and be safe from monetary losses. **Tools, Language/Technologies**: Python, Keras, Javascript, HTML, JQuery, CSS3	https://drive.google.com/file/d/1S637cTq20xmiyAFVCeUIHpGSzCoVSSdh/view?usp=sharing
59	Malicious Application Detection Android Based Malicious Applications Detection	Goal of this project is to detect applications on Android systems that are involved in malicious activities such as information leakage, privilege escalation, colluding etc. It will not only detect these activities but will also detect the applications causing these anomalies. This project involves building an application that will detect the applications causing security issues. The application will be built in Android Studio using Machine Learning. 1. This application is anticipated to detect all such applications which are causing these anomalies. 2. Another feature that will be included is to notify the user by maintaining the log. **Tools, Language/Technologies:** Python, Java, SQLite, Android Studio	https://drive.google.com/file/d/122AMXjCc6JWbRB-MLRaG6OJ5yBRt-Egd/view?usp=sharing
60	Mimic Robo	The project focuses on developing a system that trains itself on a user's voice. It then uses the trained model to generate voice notes identical to the user's voice for textual input provided to it. We are going to provide a mobile application for this, which will make it very easy for any type of user to make a clone of his/ her voice. **Tools, Language/Technologies:** Pytorch, Python, Angular, MySQL, React JS	https://drive.google.com/file/d/19mtsD2a5ksk4VXwz8Jh5RHq55yhVFqm4/view?usp=sharing

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S. #	FYP Title	FYP Highlights	Link to the FYP Report
61	PatwariX Land Registry on Block Chain	PatwariX is a Land Transaction and Registry System based on Ethereum (Block Chain). The system includes record handling of lands, buildings or any real estate related property. Chained data link i.e. history is maintained of all previous owners. Multi signature transactions as a land can't be transferred without the digital signatures of buyer, seller and the authority. Authority can add property initially. The owner is able to transfer his owned lands in separate portions i.e. break a big block and sell. **Tools, Language/Technologies:** Angular, Node js, python, Ethereum, Warehouse Management Sofware, Truffle, Ganache	https://drive.google.com/file/d/1FQw31r_ilk5Z35FtuIzJmNQaGqg0P1Dg/view?usp=sharing

BS-FYPs (Spring-2019 - Fall-2019)

S. #	FYP Title	FYP Highlights	Link to the FYP Report
1	ADSMART	AdSmart is an application that will target the right customers with the right ads. This will be achieved by thorough analysis of the user's personality and psychological state,using the social media posts and activities. This app also aims to help users with declining mental health, by presenting relevant and useful ads of rehab centers or mental health care centers and programs. Relevant ads will be shown to users on the AdSmart android application that will be used to view social media feeds. **Tools, Languages/ Technologies:** C#, Java, Python, XML, camelCasing	https://drive.google.com/file/d/11Wh_dtDEjzHC0H2x5opvn3WcegyMGrUj/view?usp=sharing
2	Cyber bullying detector	Cyber bullying detector detect the bullying instances in social networks and increase their visibility so that social institutions could do something about it; e.g., counseling for victims and bullies, detention of most reckless bullies. This software application is capable of accurately classifying Twitter messages as negative or positive with respect to some commonly used terms. **Tools, Languages/ Technologies:** Web application, Automation, Optimization, Data Scrapping, fastText, BERT	https://drive.google.com/file/d/1mXeFo6uHym-fVOs7QdAnVY6JUHaa8G5J/view?usp=sharing
3	Secret Football Stars	Secret Football Stars is a web-based application that will enable users to preform customized temporal queries and find teams and players stats and players ratings. Temporal queries will allow the users to check time based performance of teams and players at any specific interval during the match. application will provide user free hand to check stats about players like defender, goal keepers and other unsung player's. **Tools, Languages/ Technologies:** Python, ASP .NET, SentiWordNet, Beautiful Soup and Selenium.	https://drive.google.com/file/d/1TLHvLrU4VeFW7IA_s5tkXCfhdpW-HVh3/view?usp=sharing
4	Virtual pair programming	Virtual Pair Programming is a desktop application which provides a professional platform for programmers to practice pair programming remotely in supervision of team lead. This application means to provide ease for Software Engineers to work on a project in pairs by sharing code screen of Driver's screen with Navigator's which allows him to write and edit code based on the tasks assigned by team lead in a scheduled 2hour session. This app will provide voice chat and text chat. Log will be maintained of each session in a database which is available to the concerned team lead. Team lead can intervene anytime to watch and listen on going session screen. **Tools, Languages/ Technologies:** .NET, WPF Framework which is using a software architectural pattern Model–view–view model (MVVM)	https://drive.google.com/file/d/1bZooRz3Df3GG7VfUk9g1hS28GAtM1pU6/view?usp=sharing
5	Data Structures Learning Environment	This project provides a platform from which students can learn the basic concepts of data structures and once they think that they have got the concept then they can test their concepts by solving different tasks which will be generated on runtime. **Tools, Languages/ Technologies:** python, Django framework.	https://drive.google.com/file/d/1XmC1VSETb3YvZanK45vlhhhrujh9VPb1/view?usp=sharing
6	E-Polio Vaccination	The purpose of e-Polio Vaccination is to provide polio workers tracking system to help the supervisor in keeping track of their workers. It will help to ensure that no child is left without vaccination because a worker may intentionally or unintentionally miss a house or a street of allocated area. It will help the workers to complete their tasks easily by using optimized paths generated by the system. **Tools, Languages/ Technologies:** Web Applicatoin , Android Application, Real Time Tracking, Path Optimization, Data Analysis and Prediction	https://drive.google.com/file/d/1LIMNtEQJlMg04nqv16NTo-njvewHADP5/view?usp=sharing
7	CricX "A System To Automatically Generate a Summary From The Scorecard Or Detailed Report Of A Cricket Match"	CricX aims to provide a system capable of accomplishing intelligent content generation automatically without the intervention of any human force. The pure goal of CricX is to create a text summarization tool which can help summarize documents in CricX datasets and an android based chatbot to answer specific queries related to a cricket match. By having a text summarization tool, can summarize the articles to save one's time and resources. Furthermore, with the assistance of an android based chatbot, one can ask specific queries related to a cricket match and can get answers for that query. **Tools, Languages/ Technologies:** Java, camelCassing, Android Studio	https://drive.google.com/file/d/1IWW2yjosYTVdnRp7-5CLTXQIR02uyPO6/view?usp=sharing
8	LINGUA FRANCA	Lingua franca intends to aid the audibly impaired in understanding the speech of the non deaf community through sign language. This application aim to reduce the prevailing gap between the deaf and the non deaf community. This application will also help the hard of hearing come out from the isolation that they are facing in the world today. **Tools, Languages/ Technologies:** Web Application, Encoder-Decoder Model, FAP/BAP Synchronization, ASL Grammar, Audio to Text, Text to ASL	https://drive.google.com/file/d/1Y9ooI244KtgZN29BzQ706Fm0toSPzI_D/view?usp=sharing
9	Urdu Chat-bot for Pakistan General Knowledge	Urdu Chat-bot enable the user to ask a question (that will be the input) in "urdu", the application will then process the question using the concepts and techniques of Deep Neural Networks, after critical analysis of the question, a suitable answer will be generated and displayed to the user. User interact with the application, by typing their questions in Urdu script and our application will intelligently give the answer to that question in Urdu script. **Tools, Languages/ Technologies:** Django for the server, Python for the backend coding, TensorFlow for the Deep Learning and NLP techniques.	https://drive.google.com/file/d/1OGeiqmqzIVWiOV1Hz2qN24IhHpisIKZb/view?usp=sharing
10	ProgramAR	ProgramAR is a development project that will facilitate children, from age 10 to age 14, learn basic programming concepts (Input, output, Arithmetic Operations, Conditional statements, looping) through Augmented Reality. This application, with the help of research, will reduce the learning and adaptation time of children by at least 40 %. This application will especially be designed according to the child phycology, so it will increase child's interest in programming moreover in our application, basic programming concepts will be augmented into the reality and will also decrease the learning curve. **Tools, Languages/ Technologies:** XCode, Firebase, Augmneted Reality, Real Time Database	https://drive.google.com/file/d/1vZOL4YQwwgKQ6SWz_eT6n327Q-CfzuML/view?usp=sharing
11	Handbook Streaming Buddy	Streaming Buddy online virtual room where people regardless of the place they are living in can invite their friends and watch movies in an environment which will be replicating the feelings of a movie theater. The person who invites others will have the rights to pause or stop the movie during its run time upon the request of others. Similarly, communication options will also be given to people like comment section, voice and video chatting where people can not only enjoy the movie but also talk to others in real face-time video system. A synchronous video streaming will be done where all the display screens will be getting the same display and the movies that are to be selected will be placed on a central server. **Tools, Languages/ Technologies:** web application, real face-time video, voice chat, Node .js,	https://drive.google.com/file/d/1_6UR0CMT0huahGQlgOjTtdqgo2LZvkSQ/view?usp=sharing