Project Abstract Report FINAL YEAR PROJECTS 2021



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Department of Computer Science

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Final year Projects

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Project Title:	TEAM UP – AN ANDROID APPLICATION FOR JOB AND TEAM FINDING
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Abstract:	In the modern day, there is a large gap between academia and industry. Many fresh graduates from university are unable to secure a full time job for themselves in any industrial domain. This is because after graduating, individuals lack a technical and mental skill set to sustain them in an industry. Due to this problem they are not equipped to handle the responsibilities associated with a job role. The product we have built is an Android Application which gives fresh graduates and unemployed individuals to create teams for project building which would enhance their skill set. This enhancement of skill set and confidence would make them more equipped to handle the responsibilities associated with a job role in an industry. The product we are building is not only solving this problem. Entrepreneurs in the modern day today also face trouble in finding and recruiting individuals for their project ideas. This application would give them a platform to post their project ideas and recruit individuals for their teams. Lastly, employers and HR associates of companies today receive a lot of resumes daily for their job openings. This results in them being overloaded with resumes and they have no option to go through the thousands of resumes they receive for a particular job. Our application would be able to solve this problem as well by shortlisting only deserving candidates for a job.

Project Title:	'Social Media' Application for Tourists/Travelers Based on A.I Recommendation System
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Abstract:	Individuals looking to travel to a destination have the tendency to calculate all the risks associated with the activity and therefore try to collect as much information as possible before embarking on their journey. The Rapid growth in technology has made it easier for people to gain information about anything and any place just with the touch of a finger, the tourism industry has been greatly affected, or rather 'revolutionized' by this incident. Our aim is to provide a 'hassle-free' travelling application for the tourists and the travelers that also acts as a 'social media' application for such individuals as it would help connect tourists and amateur travelers to more expert individuals from the similar field via A.I based recommendation system, the application would also filter and provide the most convenient content for the user which would revolve around the detailed information regarding a destination.

Project Title:	Web Application for the Examination of Document Similarity
Students:	21-11416 Hanan Gul 21-10441 Osama Abdullah 21-10165 Syeda Saman Shah
Supervisor:	Rabranea Bqa Dr. Saba khalil Toor
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Abstract:	During the difficult times of the pandemic every educational institute is going online. By doing so several challenges are faced by the instructors, academic dishonesty by the students is one of them. To cater to this problem, we worked on this system which catches similarities in the files submitted by the students. There are a few websites and tools available that provide service to examine papers but there are no proper channels or platforms that examine documents for similarity checks within a class. Some downsides to these websites are that they are paid or have limitations on the number of checks for a single user. Hence, they are not able to use all their features in the free version. One example of this would be the popular website, Turnitin. With guidelines to solve the academic dishonesty problem (From FCCU CS Department & HEC), we decide to approach this problem head-on and come up with a solution that is just the right fit for the educational institutes. After looking at a considerable amount of software and platform, our project will completely focus on examining documents within class(offline), providing the service free of cost. This will allow users to make use of our service without any restrictions. It also allows users to do as many searches as they want without creating problems of

membership restrictions. Instructor will be able to check the similarity within all the files submitted by the students by uploading the entire folder/zip file. The results will be better and that will help us to address the problem of academic dishonesty.

Project Title:	VoiSe: Voice Security
Students:	22-11326 Mahrose Ali 21-11312 Aniga Tayyab
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Abstract:	These days, as cybersecurity has become a great issue. Lot of people find it difficult to secure data. Our project provides a solution for the consumers who need to secure their data and value privacy. The mobile application provides a demo of the capabilities of the speaker recognition module in providing security. This system is android based, having an interface which is user-friendly. It includes a vault that secures access to photos. It is used as a gatekeeper for our image files. Users can log in to their application by simply verifying themselves through their voices unlike other solutions currently present in the market (conventional security methods) for data security that may be less secure. Our product is using speaker authentication to give access to the data. As passwords are to be kept private and safe from unwanted access, the audible phrase which is used to authenticate can and will be heard by others in the surroundings. What we've come up with as a workaround to this problem is that the user can just provide the system with any sort of phrase of specific length and the system will extract special qualities and features of the user(s) from the phrase which will result in the system authentication. This eliminates the need to use specific phrases each time access is required to data, not only does our system provide the user with the ability to unlock

using different phrases every time, but our system is
also language independent which gives the system an
edge over existing solutions.

Project Title:	Automated Essay Scoring: A Comparative Study	,
Students:	21-11482Jam Ayub21-11494Muhammad Talha Imran21-11386Umama Rashid	
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Abstract:	In today's world, when written and ver- communication is crucial, good writing abilities vital. Essay writing is useful in the classroom as v as on several standardized assessments. Essay grading takes a lot of time and money. Beca essay scoring has a high subjective compon- it's difficult to utilize essay scores as an objec assessment criterion in standardized examination AES (Automated Essay Scoring) may be useful resolving these issues. It is yet a very challeng problem of Natural Language Processing. The proce- includes essay length, grammar and spelling mista and many other components that affect the quality essay. For that purpose, we studied and compa- classical machine learning models, deep learn models and transformer-based NLP models to get b possible results for essay grading in terms of m square error (MSE) and root mean square e (RMSE) score.	tbal are vell use ent, tive ons. in ging sss kes 7 of ured ing pest ean rror

Project Title:	SMART INVISOR (SOCIAL MEDIA & NEWS INFLUENCED AI-DRIVEN STOCK GUIDE)
Students:	21-11277 Ghulam Mustafa Bajwa 21-11307 Isaac Opher Ullah 21-11432 Asim Ali 21-11388 Anmool Yarmiah
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Abstract:	Investment in publicly traded companies is a risky business but if done right it can result in changing the economic class of a person. All around the world people invest in the companies they like based on past dividend yields, future earning and growth potential and many other fundamental and technical factors. One of the most important factor is news about a particular company that can have either a positive or negative impact on the sentiment that public have of that company and subsequently it's stock. So to guide people better in their investment decisions we have created Invisor a web application that allows user to pick a company name and see the prediction on price movements based on the news and public sentiment about that company. We trained the AI models in our web app on large amount of news and numerical data so that we can predict the effects of news on the stock price movement with maximum accuracy. This web app is user friendly and you don't have to be a savvy investor or technology expert to use it. User just have to type the name of the stock of the company they want to get information about. The goal is to make an application which can be used by all kinds of people belonging to various socio economic and educational backgrounds seeking investment opportunites in

equity markets can make informed decisions about the sentiments in public about the company they are going to or are invested in.

	SMART DRINKING WATER DISPENSER
Project Title:	
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	With a growing population the quality of healthy
	lifestyle is decreasing. As tap water in our country is
	not purified, it does not meet health requirements for
	drinking. As a result people are shifting to mineral
	water bottles, which also has adverse effects on
	human health and the planet. Artificial preservatives
	are added to this water in order to increase its shell
	me. Sustained and excessive consumption of
	which is dengerous especially for the aged people
	These Plastic Bottles are not washed properly and
	contain a chemical known as BPA which is often
	present in plastic bottles that become old or are
Abstract	exposed to heat these toxins are then released to in
instructi	your bloodstream and can cause problems such as
	liver and kidney damage. Moreover Exposure to the
	estrogen in BPA can also cause decreased fertility in
	both men and women, and when children are exposed
	to BPA while in the womb this can lead to
	complications later in life such as hyperactivity
	disorders, early-onset puberty, and an increased risk
	for certain cancers. Moreover, while recycling is
	more accessible than ever, 90% of plastic water
	bottles are not recycled after use, meaning that
	billions of plastic bottles are entering our landfills,
	and even our oceans, every year. In fact, so much
	plastic waste makes it into our oceans that

it is es	timated that over a million marine animals are
killed	by plastic waste each year, often due to
accide	ntal plastic ingestion. This project aims to
solve	all these problems by providing a simple
solutio	on of installing a smart water dispenser at your
homes	that converts tap water into clean drinking
water.	Our smart water dispenser saves the hassle of
buying	g and refilling plastic bottles. As our lives have
becom	e automated, so is our smart drinking water
dispen	ser that will feature an RO plant and a
dispen	ser that will be connected to your mobile
phone	by an app. The mobile app allows users to
know	TDS, PH and Temperature of water in order to
be sur	e that they are drinking clean water. Moreover,
the ap	p will notify the user as well as the server when
the sy	stem needs maintenance. Having something to
remine	l you of giving your body enough clean water
is a b	lessing in the busy world. This device is a
gadge	for all, for every household with a single
persor	to multiple families and a definite need for the
corpoi	ate
sector	

Project Title:	Hello Plant!
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Abstract:	The application will solve the problem for the flowers/plants enthusiasts to explore more about their interests through information without doing research on the internet about the specific plant or flower by searching about its various attributes e.g., texture, color etc. It would also facilitate the users in the growth of healthy plants by guiding them with the basic information which would help in the growth of the plant. The application will also provide the information beforehand if the user would be able to grow the flower based on his location and the weather of that area so that user can learn more information about it. We approached this app by making it focused on flowers that are fit for Pakistan weather and conditions, we looked at different apps that were available on the Play Store and used aspects of many of the apps that were appropriate and tried to fix on some of their shortcomings. The goal is to make an app that is easy to use and performs the task which is required from it, give the name and the requirements of the specific flower captured.

Project Title:	User experience of Applications for Educational purposes during Covid-19 Pandemic in Pakistan
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	It has been observed that from the past 2 years we
	have been living in a pandemic, Covid-19. It was the
	need of time to lessen the social interactions because
	of this. Since then all the social gatherings were
	being avoided in order to refrain the spread of the
	Covid-19 virus, all the educational activities have
	been shifted to online mode as well. As this system
	was new to the majority of the Pakistani mass, they
	found it resistant to follow all those platforms and
	faced hurdles in using them. The main aim of this
	project is to design a software prototype of an
	application (web and mobile) which has leatures of
	all that applications using for educational purposes in Deliciton from 2020. This would help in reducing
	their difficulty in perceiving the design of different
Abstract	applications for similar actions. The objective of this
Abstract.	paper was to test the LII of those online applications
	which are being used by the majority of people for
	educational reasons
	in Pakistan. We conducted interviews of people from
	different backgrounds and ages as well as different
	communities and asked them to perform some
	specific tasks, so as to achieve the accuracy in our
	results. In interviews, we asked them to perform
	different tasks and actions as well as asked questions
	where they find difficulty in performing the action.
	It has been observed that every application has some
	sort of complication or flaw in its UI design. This
	issue can be resolved by designing a Functional
	prototype using the previously and the present UI
	patterns. We designed a functional prototype which

has all the factures callectively. After designing the
has all the features collectively. After designing the
prototype, we again conducted a series of interviews
and most of the mass couldn't find any obstacle or
and most of the mass couldn't find any obstacle of
issue in using it. The results from the interviews were
tested through a testing contextual enquiry
The store through a testing, contextual enquiry.
These results proved that there is no flaw in this
functional prototype and this will be easy for the
usars as well as the application owners too
users as well as the application owners too

	Image and Video Morphing
Project Title:	
Students:	21-11149 Adil Asad
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	Automation is the future of computer-based
	tasks with our project we aim to eliminate or at
	the very least assist Video and photo editing with
	the help of Machine Learning techniques using
	Generative Adversarial Networks Generative
	Adversarial Networks are deen learning models
	that need to be trained using data that correlates
	to the preferred output results that we need In
	our project the models we need to edit the facial
	attributes of humans present in a picture frame of
	a video We used a widely available CelebA
	dataset that contains over 200,000 pictures of
Abstract	celebrities from all parts of the world this
instructi	allowed us to generate a model that can produce
	a result that is acceptable for any input image
	We distributed the dataset into training and
	testing data 90% of the pictures were used to
	train the model and the rest were used to test the
	model
	Once the user inputs the attributes that they need
	to change in the video, the attribute GAN
	produces a result accordingly. The new image
	that is produced is passed to the discriminator
	network that judges the produced image. If the
	discriminator decides incorrectly the
	interior interior interiority inte

discriminator suffers a loss and the picture is passed on to the first order motion model which wraps the new image onto the video provided by the user, hence editing the facial attributes in the whole of the video using just one frame. In our experience after building the model, we can safely deduce that GAN models are very much capable of providing video editing with help of small inputs and can produce life-like edits when changing the attributes in a single frame of the video and transferring the motion of the video in the frame. We believe that GANs at their current stage can assist video editors a lot and, in some applications, can totally replace the need for any human effort to manually edit the video, instead this can be achieved by just giving parameters to the model.

Project Title:	Field Management Services
Students:	21-10585 – Muhammad Daniyal 18-10667 – Sherazer Javed Chaudhry
Supervisor:	Dr. Saad Bin Saleem (Primary) Dr. Nosheen Sabahat (Secondary)
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Abstract:	In this project of the field management system, all aspects of the mentioned system are discussed and explained. The necessity of this system is raised due to need of efficient workflow. A web and mobile application-based project to help contractors ensure greater profitability and work through direct engineer to labour and labour to labour communication. This service boosts business communication and brings transparency in the system. Separate login areas with appropriated functionality for engineer, labour and contractor. There is a separate page where only labour can post about material and only assigned engineer can read and add more material to site area. This system allows for good communication between engineer, labour and client.

Project Title:	Real-Time Style Guidelines for Final Year Project
	Reports2D Mapping System
Students	21-10774 Erichson Ashaq Masih
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_	In a massive and complex cavern systems with huge
	number of pathways, it can be difficult to be on track
	on your own Hundreds of people get trapped and
	lost inside caves every year around the world. Even it
	is useless to have a man with you Because most of
	these maps are old and out dated As raining and
	earthquake can change the course of these dark voids
	Even Global Positioning System cannot help you to
	got back on track in these situations. So to halt this
	get back on track in these situations. So, to halt this
	problem we have created a prototype which can
	Gevelop an up-to-date map of these caverns.
	Explorers or Spelunkers can use these accurate maps
	to find their way back to outside. It has two major
	components Robot Car and Laptop. Firstly, we
Abstract:	connect our robot car to our laptop using W1-F1
	network. Then we use laptop to open Robotic
	operating system visualizer (RVIZ) to view the under
	development map. Second person is need to drives
	the robot car around the cave. This will generate the
	two dimensional map of a cave on the RVIZ. These
	maps can be saved and converted into other viewable
	formats. The target of this project is to minimize the
	risk of people getting lost in these situations. Because
	in the situation related to people getting lost in
	cavern, almost 10% of them lose their lives. This
	product can not only be helpful for policemen and
	cave rescue organization experts to find lost groups
	but also help anyone who needs their building or
	environment mapped. For example: miners can use to

map the old mines. Hector SLAM algorithm is used in our prototype because it can work with change in altitude, Pitches and potholes cannot effect the change in development of map. Some changes in Hector SLAM algorithm can be made to convert this from two dimensional to three dimensional without any change in the hardware. This product can be upgraded as indoor GPS system. The product is designed for not home use but for Organizations on rescue purposes.