**Link:**

<https://sites.google.com/a/ciitlahore.edu.pk/cs-fyp/home/ideas-for-students>

**FYP Ideas for Students:**

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| **Sr. No.** | **Title** | **Brief Description** | **Area** | **Pre-requisites** |
| 1 | Farming Assistant Web Service | A Web project to help farmers ensure greater profitability through direct farmer to supplier and farmer to farmer communication. This innovative site allows for good farmer, retailer and supplier communication. | A Web project to help farmers ensure greater profitability through direct farmer to supplier and farmer to farmer communication. This innovative site allows for good farmer, retailer and supplier communication. | Good programming and database concepts |
| 2 | Unique User Identification Across Multiple Social Networks | User may login to different social networking sites at different timing, ¬¬so user may not find his friends online when he logins to the particular social networking website. To overcome this issue proposed system will bring together our online friends on different social networking sites into a single integrated environment. | Web Development, Social Networks | Good programming and database concepts |
| 3 | Android Based Parking Booking System | It provides customers an easy way of reserving a parking space online. It overcomes the problem of finding a parking space in commercial areas that unnecessary consumes time. | Web Development, Android Application | Good programming and database concepts |
| 4 | Online Election System | Online Election System would have Candidate registration, document verification, auto-generated User ID and pass for candidate and Voters. Admin Login which will be handled by Election Commission .Candidate Login which will be handled By Candidate, Voters will get Unique ID and Password, Using which they can vote for a Candidate only once per Election | Web Development, Data Base | Good programming and database concepts |
| 5 | Doctors on Hand | Main idea of this project is to make a hand held application through which patient do not further need to go doctor to doctor to find who is expert and can treat your disease. This application will find itself a most suitable/expert and nearest doctor according to your disease. | Natural Language Processing | Good programming skills. |
| 6 | A Liar Robot | Robots always tell us for what they are programmed/ they always tell us the truth. But the idea of this project is to make an intelligent robot which can tells a lie as human do, so mimicking pure human behaviour. | Intelligent Machines and Robotics | Strong Programming skills with hardware level knowledge/ interested in learning, good in assembly language. |
| 7 | Interactive Game to learn Traffic rules | According to the latest WHO data published in 2017 Road Traffic Accidents Deaths in Pakistan reached 27,081 or 2.22% of total deaths. The age adjusted Death Rate is 15.42 per 100,000 of population ranks Pakistan #104 in the world. People get their driving license just by knowledge of driving. However, traffic rules are also important and majority drivers do not know all sign and rules on roads. Road traffic injuries is growing issue. Main causes which are found behind these road accidents are lack of training institutes, unskilled drivers.This game will help them learning driving rules in an interactive way and they will remember them for a long time. All rules are available in online book given by traffic police. | Game Development, Data Base, Computer Graphics | Android Development, Database, Computer Graphics |
| 8 | Vehicular IOT |  | Distributed Systems, Android programming, Internet of Things (IOT) | Android programming, Network programming |
| 9 | Batch Advisory | This will be an online portal to help batch advisors. With this portal batch advisor will be able to decide if a student is capable of selecting the course he wants to opt for. This portal will minimize the time and workload spent in looking students schedule, class, clashes, prerequisite, ability to pick a course. | Web development, Database | Database and programming concepts for frontend and backend |
| 10 | Urdu Based Medicine Compliance Application | According to the International Society for Pharmacoeconomics and Outcome Research (ISPOR), adherence is “the extent to which a patient acts in accordance with the prescribed interval, and dose of a dosing regimen.[1]”Medication nonadherence can affect patient health adversely, negatively impact a patient’s relationship with his/her care provider, skew results of clinical therapy trials, and increase health resource consumption[2,3]. Medication nonadherence remains a common health care problem. Poor adherence causes approximately 33% to 69% of medication-related hospitalizations and accounts for $100 billion in annual health care costs[4] Several application are available to provide help in this matter. Some example are PatientPartner http://mypatientpartner.com/#theapp Medisafe http://www.medisafeproject.com/ Dosecast http://www.montunosoftware.com/products/dosecast/about/ The problem is that these are English based applications where as majority of our population does not understand English. We need a similar application, but Urdu based. 1. Cramer JA, Roy A, Burell A, et al. Medication compliance and persistence: terminology and definitions. Value Health. 2008;11(1):44–47. [PubMed] 2. Ruddy K, Mayer E, Partridge A. Patient adherence and persistence with oral anticancer treatment. CA Cancer J Clin. 2009;59(1):56–66. [PubMed] 3. Waterhouse DM, Calzone KA, Mele C, Brenner DE. Adherence to oral tamoxifen: a comparison of patient self-report, pill counts, and microelectronic monitoring. J Clin Oncol. 1993;11(6):1189–1197. [PubMed] 4. Osterberg L, Blaschke T. Adherence to medication. N Engl J Med. 2005;353(5):487–497. [PubMed] | Android Application Development | Good programming capability in Java |
| 11 | Sentiment Analysis of Facebook Users: A Software System | Social media applications extremely reflect upon people sentiments. An understanding of this trend will potentially assist to identify the harmful factors that need to be eliminated as well as suggestion system can be proposed. Our emphasis will be to build an application for fetching data of Facebook by using Graph API, analyze the trend of data, and later offer a complete system that will be built based on the theory of Statistics, AI and Human-Computer Interaction. Contact: Faculty Block Room 184 or email AT faizanahmad@ciitlahore.edu.pk | Android Application Development | • Skilled in Java/Android and Databases. • Willing to learn new API (e.g. Graph API). • Willing to explore research literature. • Excellent English writing skills. |
| 12 | Autism Rehabilitation System | It is now established that the assessment, as well as rehabilitation of human cognition, is possible through brain games. A huge number of population is suffering from autism around the globe. Few games have already been made in this regard, however, the findings are not conclusive. Our emphasis will be to analyze the existing research literature to understand where this domain currently stands, and offer a complete system that will be built based on the theory of psychology and Human-Computer Interaction. Contact: Faculty Block Room 184 or email AT faizanahmad@ciitlahore.edu.pk | Unity Game Development | • Skilled in Java/C# and Databases. • Willing to learn Unity3D along with other new frameworks. • Willing to explore research literature. • Excellent English writing skills. • Have vast experience/sense of gaming (i.e. necessary to design game theme/story). |
| 13 | Intelligent Gestures-oriented Smart Devices Operability System | With the increase of features in smartphone devices its usability is getting complex. An efficient designing of widgets already addressed the issue to a certain extent, however, in the presence of mobile sensors it can be further improved. Using important features of smartphones through gestures recently got attention, however, seeking out natural gestures for the corresponding features as well as their recognition is still a challenge. Our emphasis will be to analyze the existing research literature to understand where this domain currently stands, and offer a complete system that will be built based on the theory of AI and Human-Computer Interaction. | Android Application Development | • Skilled in Java/Android and Databases. • Willing to learn new frameworks. • Willing to explore research literature. • Excellent English writing skills. |
| 14 | Elderly Care and Monitoring System | There already exist several elderly care systems, however, they offer assistance with certain limitations in terms of features as well as operability that eventually effects the adaptability of the target audience. Our emphasis will be to analyze the existing research literature to understand where this domain currently stands, and offer a complete system that will be built based on the theory of AI and Human-Computer Interaction. Contact: Faculty Block Room 184 or email AT faizanahmad@ciitlahore.edu.pk | Android Application Development | • Skilled in Java/Android and Databases. • Willing to learn new frameworks. • Willing to explore research literature. • Excellent English writing skills. |
| 15 | Online Web Portal to submit, review and composition of CJIF (COMSATS Journal of Islamic Finance) | Online portal will be mainly capable of • Taking submissions of article submitted by authors according to a specific format. • Sending Article for blind peer review to reviews • Sending article to proof readers for proof reading • Getting response from reviews and proofreader • Serving all the roles in the submission process i.e. author, reviews, proof reader and editor. • Auto generating emails and timelines for each role • Auto generating of final version of journal | Web development, Database, HCI | Good programming and database concepts |
| 16 | PROLINK | Purpose of this app is to create links between properties agents inter or intra offices. Through this app they will be able to organize their list of properties they are working on for selling, buying or rent out. Boss of the office will create an admin account for one office and rest of dealer in that office will use that application as users created by admin. Property uploaded by single user can be seen by other dealers of that office as well. For example if a dealer want to sell a house and he uploads data of that house. Another dealer who has a client who wants to buy a house, he will search if a house is available via app and will contact the dealer who is selling house. This will save the effort the spent on making phone calls to all and searching in long queued messages in WhatsApp groups etc. | Mobile App development, Database | Database and Android development programming concepts, CGPA Above 3.3 |
| 17 | BANADO | This is an online web portal which will deal in property and all type of businesses involved in house building e.g. brick makers, cement sellers, electric and sanitary merchandisers. Property agents will be able to contact with each other directly by sending or receiving notifications of recent properties they want to sell, buy or rent out in any particular area. Individuals will be able to see who is selling material in low cost or giving less expensive and trusted services and from where they need to buy bricks, cement and other material during house building depending upon cost and extra services they provide. | Web development, Database | Database and programming concepts for frontend and backend, CGPA Above 3.0 |
| 18 | E bridge | System which mainly helps to improve communication between Teacher and Student. | Web based Application/Android Application | Good programming and database concepts |
| 19 | Lost and Found Management System | Web based Lost and Found management system. Designed to help the university to manage and restore their student's lost items. | Web based Application/Android Application | Good programming and database concepts |
| 20 | Time Table Management | The problem is to design and implement a web based application to create a semester course time table by assigning time slots and rooms to a given set of courses under given constraints like avoiding clashes of timeslots and rooms assigning proper rooms and appropriate slots and contact hours etc | Web based Application | Good programming and database concepts |
| 21 | Bandwidth aggregated Web browser | The explosive increase in data demand coupled with the rapid deployment of various wireless access technologies have led to the increase of number of multi-homed or multi-interface enabled devices. Simultaneously leveraging these interfaces by potentially aggregating their bandwidths can lead to higher throughput, improved end-user experience, and efficient resource utilization. Recently the software designed for the bandwidth aggregation, work both on the server as well as client side i.e. they don’t work unless the software is installed on the server side. Our aim is to design a bandwidth aggregated web browser which is independent of server side segmentation i.e. no work is required to be completed on server side. | Desktop Application | Good programming and database concepts |
| 22 | Home/Office Electricity Monitoring |  | Distributed Systems, Android Programming | Android programming, Hardware knowledge of mobile phone and electricity boards, Arduino/Raspberry pi programming |
| 23 | Soil moisture monitoring System |  | Distributed Systems, Android Programming | Android programming, ability to integrate arduino/raspberry-pi board with senors and Android phone |
| 24 | Car Automation and Control |  | Distributed Systems, Android programming, computer engineering, computer science | Android programming, Hardware knowledge of mobile phone and car ignition, Arduino/Raspberry pi programming |
| 25 | Homeopathy Expert System | Homeopathy is very popular medicine as it has very few or side effects. The medicine is suggested or advised based on identification of certain symptoms. Idea is to build an expert system for homeopathy doctors that could suggest medicine after careful analysis of the symptoms entered by the physician. After suggestion system would learn and keep the record of patients for future consultation. | Web / Mobile Application |  |
| 26 | Virtual Class Room | Virtual reality is and will be at its boom in coming years. The proposal is to build a proof of concept that could virtualize a class room environment. Utilizing capabilities of Kinect and HTC VIVE or any other VR platform. Student from any location could connect to the class and feel like in a class room environment and view teacher delivering a lecture in front of them. | Web / Mobile Application |  |
| 27 | Smart Bus Management | Aim of this web and mobile platform is to provide companies to register and utilize the system to manage their bus routes and registrations. System will suggest the fastest yet optimal routes to allow maximum passengers(employees/students in case universities) to be accommodated in the buses. it would suggest number of buses required on each route designed by the administrator. The system will also updated and share the current location and status of the bus with relative stake holders (company/parents/relatives) | Web / Mobile Application |  |
| 28 | Health and Diet Portal | Basic idea of the web and mobile platform would be to create and allow people to maintain a healthy life style. It will include specialized features to generate a healthy activity plan for the week and based on input from nutritionists system will be self capable to generate a healthy customized diet chart for each person registered with the website. | Web / Mobile Application |  |
| 29 | Online Bakery Shop | This online Bakery shop will allow users to check and purchase various bakery products available online. The project will consist of list of bakery products displayed in various categories and the user will browse through the items and will do online shopping. He will do online payment. Thus, the online Bakery shopping project will bring an entire bakery shop online, making it easy for both buyer and seller. | Web Application/ android Application Development | Good programming and database concepts |
| 30 | Online Herbs Shopping | This project will help the users in curing his disease by giving the list of fruits and herbs that the user should consume in order to get rid of his disease. This system will help the user to reduce his searching time to a great extent by allowing the user to enter his health problem and search accordingly. This system will also allow the user to online place the order and make online payment for the same. Thus this system will help to cure the user’s disease to a great extent. | Web Application/ android Application Development | Good programming and database concepts |
| 31 | E Conference Management System | The aim of this project is to provide an online submission management system, that streamlines and eases out the collection, tracking and management of electronic submissions. Information can be received, authenticated, tracked, stored, and distributed electronically for evaluations. | Web Application | Good programming and database concepts |
| 32 | Help-Online | The aim of HelpOnline is to provide the daily basis services to users at home. Using application users can request for different services. He can view the charges he ll have to pay for the services and pay online.he can also give feedback on the services he receives from a particular service provider. our customer can also request for the services of a particular service provider based on his/her trust built from previous experience . | Web Application/ android Application Development | Good programming and database concepts |
| 33 | Mobile Discount Directory | We propose a Mobile Discount Directory with the use of Global Positioning System to find discount, coupons and promotion information, which surround user’s current location. Using this application, mobile device users can present the digital coupons at the point of purchase or meals. It brings convenient to users and helps them consume intelligently. | Android application development | Programming, Database |
| 34 | RAID As a Service of Cloud Computing |  | \* Software development \* Cloud Computing | \* Strong coding skills are required in JAVA, Wed Technologies and Database Systems \*Students with CGPA higher than 2.8 will be preferred. |
| 35 | On Road Salaat Planner | This is an Android based application to facilitate people traveling by road over long distances who are careful about their Salaat (prayers). The idea can be explained with an example. Suppose you are going to travel to Islamabad from Lahore via GT Road. You want to plan ahead your stops based upon Salaat time. For this you need to know where will be the closest mosque on your route when it is time for each Salaat. This apparently simple idea needs lot of thought and integration. You have to consider the fact that Salaat times change throughout the year, it needs to integrate with Google-maps to find out which route the user wants to take etc. It is not that critical on GT Road. But imagine a Muslim family in U.S.A traveling from New York to Florida who is very careful about their Salaat, they will greatly appreciate this application. | Android Application Development | Java Programing |
| 36 | Customer Intention Prediction through Social Media |  | \* Software development. \* Natural Language Programming (NLP) | \* Coding skill in Java and database \* NLP basics |
| 37 | Personality Identification through Social Media |  | \* Software development. \* Natural Language Programming (NLP) \* Psycology | \* Coding skill in Java and database \* NLP basics |
| 38 | Event Hall Management System (EHMS) | EHMS is an events management automation system for a Pakistani banquet hall that helps the banquet hall in the automation of its daily business operations. It facilitates the banquet hall managers to run their operations smoothly and also facilitate customers by providing them the required information about booking schedules at their homes. There are multiple systems available but none of them gives the client a full package covering their business requirements. | Web Application/ android Application Development | Good programming and database concepts |
| 39 | Tour Hunting | Tour hunting is a website that is very helpful in the selection of the most appropriate tour for the entertainment of the people. It registers different tourism companies which can add their tours details on the website. The visitors of the website can compare different tour packages added by different companies and select a tour. The selection is made on the basis of predefined factors of which the user can select any combination of factors. | Web Application/ android Application Development | Good programming and database concepts |
| 40 | Software Defined Networking |  | \* Software development. \* Networking | \* Coding skill in Java and database \* Network concepts of TCP/IP stack and Network security |
| 41 | Business Management Information System - BMIS V3 | BMIS is general purpose business management application. It has Sales, Purchases and Accounts modules developed using Spring MVC and AngularJS. BMIS V3 objective is to add new and improve existing features. Working on BMIS requires exceptional knowledge of Java, OOP, DB, Web MVC and motivation/skill to learn new technologies fast. 2 group members must be good programmers. | Web Application Development | Java, RESTful Services, AngularJS, Logic Building |
| 42 | Duplicate Profile Detection |  | Social Networks | Basic programming skills, database, web programming, Machine learning |
| 43 | Selection of cloud based on customer’s security requirements | The project will be developed in order to suggest a suitable cloud to the customer based on his/her security requirements. | Cloud Computing | Java/C# programming |
| 44 | Organizational based data categorization in Cloud | The project will use DM to categorize data based on the organization in the cloud. This project will be considered a new sub-service of storage service. The cloud will receive the data and will process the data (using DM as the main engine) based on the predefined attributes and will allocate a specific label to the data. Finally, that data will be stored on the proper inner-cloud. | Data Mining, Cloud computing | Knowledge of data mining and Java programming |
| 45 | Big Data based Prediction Service |  | BigData, Cloud Computing | Configuration Knowledge for Hadoop/Spark, General Programming, Web Programming, Android Programming, Artificial Intelligence |
| 46 | Water Pollutant Monitoring through Remote Sensing |  | Distributed Systems, Android Programming | Android programming, ability to integrate arduino/raspberry-pi board with senors and Android phone |
| 47 | Aerobics & Physio-therapy Monitor/Trainer |  | Kinect Programming | Kinect configuration, data extraction and analysis, general programming skills |
| 48 | Accent Trainer |  | Software development, Cloud Computing, Android Development | Android/Windows mobile programming, Access to microphone and feature extraction from audio multimedia are must. Database System implementation for audio files and comparison. |
| 49 | Tracking as a Service |  | Distributed Systems, Cloud Computing | Java/C# programming Android/Windows mobile programming and access to WiFi and location service Web Service programming Internet/Web/Network programming Database knowledge |
| 50 | Providing video surveillance using mobile phone |  | Mobile computing, Distributed Systems | Android/Windows mobile programming Access to Camera, Bluetooth, WiFi, Mobile data and location service is a must. Mobile phone capable database programming such as for MySQL will be an added advantage. |
| 51 | Smart Internet censorship | Internet censorship is a way in which an authority has its control over the user’s surfing over the web. It includes the control of what can be seen viewed, accessed or published over the web. Internet censorship is applied over the web traffic due to some religious, business or moral reasons. Today internet surfing is becoming an issue which requires great attention of ISPs in almost every part of the world and they are trying to solve these issues by different ways. Some websites are not required in the community and the presence of such websites/blogs etc. is harmful for the users due to some cultural and/or political reasons. This final year project considers the very problem and proposes a smart internet blocking system based on the contents present on a website. For further details please visit Dr. Adnan Ahmad in Faculty Block Room 37 | Software Engineering | software engineering, algorithms, good programming and analytical skills |
| 52 | Service Oriented Architecture Implementation | Over the past few decades, software design architectures have become increasingly complex because of the increasingly complex IT needs of various systems for organizations. Until recently, most of the software design architectures were monolithic. Monolithic architectures of increasingly complex software design usually impose strong restrictions. These restrictions cause many issues; for instance, difficult integration with other software tools, less interoperability and less reusability of various software components. By providing “loose coupling”, “location transparency”, and “protocol independence”, service-oriented architecture (SOA) is a promising architecture to solve these problems (Endrei et al., 2004). Today, most of the major software vendors such as Microsoft, IBM, Google, are using SOA. In this project, students are expected to develop a system using SOA. The software design, implementation and integration give them a head start to join the software industry. For further details please visit Dr. Adnan Ahmad in Faculty Block Room 37 | Software Engineering | software engineering, algorithms, distributed systems, good programming and analytical skills |
| 53 | Sandboxing | Sandboxing refers to the security mechanism which is used to separate various running programs in the same system. It is normally used to execute untrusted code, so that if there is any harm in its execution, it remains limited to an isolated environment only. Let us consider the classic dilemma, where a person has received a file and eager to see what is inside, but at the same time afraid of infecting his system through a virus. One possible solution is to open the file in a controlled environment (sandbox), so even if it is infected, the effect can be localized. Without a proper sandbox mechanism a system always faces threats of viruses and Trojans every time a code executes. This final year project deals with the development of a sandboxing environment and helps students to deeply understand programming fundamentals, operating systems and access rights. For further details please visit Dr. Adnan Ahmad in Faculty Block Room 37. | Software Engineering | software engineering, algorithms, operating systems, good programming and analytical skills |
| 54 | Software Quality Assurance | This final year project explores the dimensions of software testing, and the development of such automated tool. The students will be dealing with the generation and execution of test data to evaluate the correctness of a program. There are some quite famous techniques present in the literature and the students will be developing some of them. Mainly the project explores black box and white box testing and highlights the errors that can go unnoticed by the programmers. Some common errors/warnings include: “memory leaks”, “dangling references”, “infinite loops”, “fall through cases in switches”, “out of bound”, “unreachable code”, “ignored return values”, and “unused variables and functions”.For further details please visit Dr. Adnan Ahmad in Faculty Block Room 37. | Software Engineering | software engineering, algorithms, good programming and analytical skills |
| 55 | Secure collaboration for e-learning system | E-learning is the use of information and communication technology (ICT) in education. The process spans over various component including collaboration between teachers and students, which turns out to be a critical success factor. In online courses, it is even more desirable that teachers may collaborate with students effectively to enhance the latter’s capabilities. However, it is also quite important to secure that collaboration so that no unauthorized action may take place. Secure collaboration is important in ensuring that every resource or information may remain restricted to its authorized users. This final year project focuses on the development of a novel collaborative module for e-learning systems and provides the opportunity to the students to improve systems concepts, programming and critical thinking that will help them in industry. For further details please visit Dr. Adnan Ahmad in Faculty Block Room 37. | Software Engineering | software engineering, algorithms, good programming and analytical skills |
| 56 | COAT-Collaborative Outgoing Anti-spamming Technique | Spam and anti-spam techniques are part of email since its birth. Spam is electronic garbage with no anticipating recipient and almost always deleted. In 2010, around 89% of all emails were spam, resulting in an estimated 260 billion spam emails sent every single day. Most of the current anti-spamming systems focus on incoming spam but these messages still travel the internet world and waste bandwidth, storage and processing resources. This final year project proposes a collaborative outgoing anti-spam technique to reduce the spread of spam on the internet. The technique targets outgoing emails and its use would free the internet from 260 billion spam a day. For further details please visit Dr. Adnan Ahmad in Faculty Block Room 37. | Artificial Intelligence, Machine Learning | software engineering, algorithms, good programming and analytical skills |
| 57 | A visualization tool for analyzing trends in the field of computer science | This is a HEC funded project. Basically the visualization tool developed in this project will help analysts to evaluate the performance of individuals, organizations, nations, and groups working in the field of computer science. This in turn can be used to know the impact of decisions and policies made for allocating resources and funds, and proposing the future directions for the field.The Higher Education Commission (HEC) of Pakistan can take a lot of benefits from the product developed through this project. The developed product through this project will help the students, scholars, and teachers to find collaborators, experts, and supervisors in their field of study either locally or at global level. | Communication Networks | Good programming skills in Java, computer graphics |
| 58 | Simulator for Unmanned Aerial Vehicle (UAV) | Cool test of UAV through simulator is very important before you fly your real UAV. A perfect simulator can save a lot of money. Simulator can be developed in any symbolic simulator like MatLab. Finally, developed simulator can also be converted into interesting games. | Intelligent Machines and Robotics |  |
| 59 | Linguistically Motivated modified sentences | In paraphrased plagiarism, the most common editing operation is synonym replacement. The idea here is to to explore linguistically motivated modifications of sentences. So, making sure that the modified sentences (or n-grams) come from sensible sentences, to build on the work which I did in my PhD (see Chapter 5 of my PhD thesis for more details). | Natural Language Processing | Python, Java or Perl programming skill |
| 60 | Extracting parallel samples from comparable corpora. | Wikipedia is a multilingual resource. It can be used in extracting parallel fragments from its comparable articles in different language pairs. The outcome will be a valuable resource for machine translation. | Natural Language Processing | Python, Java or Perl programming skill |
| 61 | Cross-language re-use in source code | Whereas work on source code re-use detection started nearly forty years ago (Ottenstein, 1976), Internet has made available huge amounts of code. As for texts, “much plagiarism and adaptation is now of computer programs” (Wilks, 2004). Finding cases of re-use across programming languages seems to be an interesting problem. When dealing with this problem, it is possible to take advantage of the certain similarity between the reserved words across programming languages. Flores, Barr´on-Cede˜no, Rosso, and Moreno (2011, 2012) have made some preliminary efforts on detecting re-use among codes in C++, Java, and Python, using the cross-language character n-grams model. Authors suggested that cross-language alignment-based analysis model may be valuable as well for two reasons: (i) building a statistical dictionary for reserved words is feasible and (ii) even the length model could be worth considering to determine, for instance, how short a code in Python should be respect to its source in Java. Flores, E., Barr´on-Cede˜no, A., Rosso, P., and Moreno, L. (2011). Towards the Detection of Cross-Language Source Code Reuse. International Conference on Applications of Natural Language to Information Systems, LNCS (6716), 250–253. Springer-Verlag. Flores, E., Barr´on-Cede˜no, A., Rosso, P., and Moreno, L. (2012). DeSoCoRe: Detecting Source Code Re-Use across Programming Languages. In Proceedings of Conference of the North American Chapter of the Association for Computational Linguistics: Human Language Technologies, Montreal, Canada. ACL. | Natural Language Processing | Python, Java or Perl programming skill |
| 62 | Text re-use and search engines | Text re-use detection implies no looking for topical similarity, but for co-derivation of texts. Therefore, text re-use detection models cannot be considered when designing a “traditional” topic-based search engine. However, models for text re-use detection are still worth considering in modern search engines. For instance, in a monolingual setting, models for text re-use detection could be used to improve the search diversity: avoiding to present near-duplicate documents on top of the returned ranking. In a cross-language setting, these models could be used to assist the user for cross language searches. Imagine the following scenario: (i) a person queries a search engine in a language different to her native one (e.g. Spanish is her native language and English the language of the query); (ii) the search engine returns a relevant document written in English; on the basis of algorithms for cross-language text re-use detection, a translation in Spanish is found. (iii) instead of offering the possibility for translating the relevant document “on the fly”, the search engine offers the available translation, with a high likelihood of representing a better translation. | Natural Language Processing | Python, Java or Perl programming skill |
| 63 | Identification of Proper Citations | Probably one of the most interesting topics for future research on plagiarism detection is the automatic analysis of citations and references, a problem that, although mentioned already by Maurer et al. (2006), still remains unsolved. When a text fragment is properly re-used, i.e., including its corresponding citation or reference, it does not compose a case of plagiarism, and it would not be considered as suspicion. The development of techniques for discriminating between plagiarism and properly cited re-use requires, firstly, obtaining (or generating) diverse cases of quotations and, more general, proper and wrong citations. Afterwards, models that recognise proper citation patterns could be designed. | Natural Language Processing | Python, Java or Perl programming skill |
| 64 | Restaurant Automation | Restaurant automation is the next evolutionary step for restaurants that are looking to increase customer awareness and loyalty, and offer their valued guests a modern and interactive way to order food as well as receive personalized and interactive service. We develop sleek and easy-to-use Android tablets and mobile application that you can use to replace your outdated paper menus of yesteryear and provide guests with attractive electronic menu board instead. Restaurant Automation is designed to support all kinds of android based devices. Android tablets and mobile are one of the coolest ways to display ideas. Android based mobile applications are sleek, stylish and very handy, convenient and easy to use. They are interactive touch screen display which makes viewing a pleasure. We are going to facilitate the customers that they can easily order the desired food. There will be complete digital menu of restaurant with prices and availability shows on your mobile. Expected delivery time of order will be notified and your order details will be sent to the counter. | Mobile App (Android, iPhone, etc.) |  |
| 65 | Efficient biometric system for CIIT | Currently used biometric system is not sufficiently efficient & user friendly. Further it is not 100% accurate. We are developing a professional biometric system with better efficiency and accuracy. | Vision, Image & Graphics (VIG) | Digital Image Processing or Computer Vision |
| 66 | Facts finding and monitoring of persons on social networks | Social networks on net are very useful and becoming more & more popular among young generation. However these are now the main cause of Cibber crimes. We are going to develop an application which can guess actual info. of newly added unknown person based on keywords used during messaging. All conversation will silently transfer to guardian through email and will immediate alert in case of any threat. | Web Development |  |
| 67 | Final Year Projects (FYP) Management System | Currently FYPs are being managed through Dropbox & Google site with some limitations. We are shifting the whole process of FYP management on our local server with more features, flexibility and convenience. Deployment of this project is also the part of our job. | Databases and Operational Intelligence |  |
| 68 | Remote Administration using Mobile | The mobile devices are becoming more and more popular and powerful and are providing a new notion of communication that we could once only imagine. A truly wireless mobile is new to the vast majority of computer users. We know wireless mobile phones, but the idea of being able to connect to the Internet in a similar fashion is something with ramifications we've yet to fully realize. The vast majority of us are still accustomed to plugging a modem into a phone back to connect to the Internet remotely. The enhancements in the technologies help us to have the Internet accessing facilities even on the mobiles. Our project is related to accessing a remote PC using a mobile. The system gives the user the user the ability to access remote computer via mobile phone from everywhere in the world. The user is connected to the Internet server by a service provider according to the IP address specified by him. If a connection is established the user can access the remote system. The user can read, write and can execute specific files on the remote PC. | Mobile App (Android, iPhone, etc.) |  |
| 69 | Mobi Travel Guide | Current tourism system, whenever a tourist visits famous spots, to know more about the place he hires a guide. The hired guide then narrates history of the place. The proposed system doesn’t require a physical guide. The Mobile application installed on the mobile of tourist can act as a guide. The application “Mobile Travel Guide” solves all these problems. It offers below services, 1. Retrieves the user’s current geological coordinates. 2. Converts the Latitude/longitude to street address. 3. Does video search for that place and displays those to user. 4. User watches the video of his choice. Mobile Application has,  Location finder  Video Search  Video player  Provide other assistance  Settings | Mobile App (Android, iPhone, etc.) |  |
| 70 | Characters, scenes and other graphics for the Islamic Economics Game | There is a great need for original characters, scenes and other graphics related items for the above game. This effort does not need “programming” as such but requires a lot imagination and extensive use of many graphics related tools. | Game Development | Use of graphics related tools |
| 71 | Web Based Game to Simulate Islamic Economic System | It is the same idea as described above (Andorid or iPhone Based Game to Simulation of Islamic Economic System), except that instead of working on Android based platform it will be web based and can be even a Facebook application with same look and feel as the mobile based one. | Game Development | Programming, DB, OS |
| 72 | Android or iPhone Based Game to Simulate Islamic Economic System | Almost every semester I hold a discussion on economic system of Islam and almost every time people ask me, where is it implemented? Obviously the answer is, currently nowhere. This got me thinking, what about if we can implement it virtually. What I mean is how about if we develop a large multi-player computer game based on Islamic Economic principles. This game will have multiple benefits the immediate two are: 1) It will introduce people, especially our young people, to economic principles of Islam. Many of our youngsters play useless games like Simcity, Civilization etc. My aim is to engage young people in exploring concepts of Islamic economic system. These people most likely will not read economics books but they might play computer game. This way we can get them to discuss what is actually happening in our society as compared to what should be happening. It will hopefully demonstrate to them that if we all play according to Islamic rules we will all ( except the current ruling elite ) be better off. This might bring about the much needed change without the bloodshed that political pundits are talking about. 2) It can generate data ( albeit simulated/game data) about how an economic system based on principals of Islam will work, what will be the distribution of wealth, how will businesses operate in such a system etc. This will depend on how the game is designed and played. A basic version of the game with two modules was developed last semester by students of CIIT and one group from NU-FAST is working on a web-based version. But as anyone who has ever played Simcity or any such game can appreciate that it is huge undertaking. It is a very large project and as such will require many people and a few years to fully develop. | Game Development | Java programming, DB, OS |
| 73 | Designing fair route for non-holonomic mobile robots | The path of any non-holonomic (car like) mobile robot travelling from one point to another needs to be smooth (fair) so as to avoid sharp jerks that can otherwise create premature wear and tear of the robot. Since most of such robots are battery operated therefore not only less oscillations in their path is required but also we need to keep these shortest (time & energy efficient).Any path avoiding obstacles (if any) might be an additional requirement. | Intelligent Machines and Robotics | Numerical Methods |
| 74 | Ballistics Image Processing (BIP) | The introduction of imaging technology to assist the identification process of firearms has enhanced the ability of forensic ballisticians to conduct analysis of these specimens for perfect identification. Firearm identification is an intensive and time-consuming process that requires physical interpretation and matching of fire pins with firearms. Image matching algorithms in a database of cartridge cases of firearms will be developed to automate the whole process of firearms identification in Punjab Forensic Science Agency, Lahore. | Vision, Image & Graphics (VIG) | Digital Image Processing or Computer Vision |
| 75 | Outdoor Navigation System for Organizations | The project is to develop Android and Web Application for Outdoor Navigation System at Organizational level. Admin can perform following functionalities.Add map of any organization into Web Application Provide some details, such as, basic longitude and latitude, paths (such as roads, walking tracks etc), details of different locations.Whereas End user can Perform following functionalities: 1.) Search locations, 2.)Get directions from one place to another, 3.) Navigate through street view, 4.) Add favorite places, 5.) Create own map which will be synced with Android Application. 6.) Android Application will provide map and navigation system (using GPS) of the organization where user can search places, get directions (voice prompt navigation). User account will be synced on both, Android and Web Application. | Software Engineering | Android SDK, HTML, XML, PHP, JavaScript, mySQL |
| 76 | Comparison of probabilistic routing protocol with proactive routing protocols in wireless adhoc networks | Wireless adhoc networks with mobile devices are highly dynamic and complex in nature. For such networks routing strategies are different from traditional networks as these networks are time variant. For such networks, we can find an efficient routing protocol under time-variant property of network. | Communication Networks | • Computer Networks • Strong programming concepts • Excellent command of C/C++ • Eager to learn new material by self-study |
| 77 | Detection of Malicious Applications on OSN | Online social networks (OSN) have grown a largest platform for interaction and entertainment such as games. A lot of applications are developed for the OSN; however, the real intentions of the application may vary from developer to developer. Some application may have malicious intentions for which user may not be aware. Machine learning can algorithms can be used to detect malicious applications offered to OSN users. | Artificial Intelligence, Machine Learning | • Strong programming concepts • Excellent command of Java / Python • Good concepts of statistics and linear algebra (Optional) • Eager to learn new material by self-study |
| 78 | Smart Learning Advanced Tools for Education (SLATE) | Leading to a mega project SLATE, we are developing a state-of-the-art and very interesting learning tools for the children of nation. Main objective is to bridge the huge gap among our different education standards. Our graphical and animated learning tools will not only accommodate all levels of students in a class but also very helpful for teachers and parents. We envisage the use of intuitive animations for teaching as per the intellectual requirements of individual students. The thematic composition of the learning environment is based on concepts adapted from famous and interesting games. Our application is child friendly, bilingual (English and Urdu), available both for windows and android, handy (tablet & mobile versions), and helpful in clearing concepts using personalized examples from our own culture. It has flexible adaptation of teaching methods in the light of child performance catering the need of each individual student through evaluation after every lesson. Teaching, learning, and evaluation modules of our project are being surveyed during the development phases for the feedback of children, teachers, and parents. | Vision, Image & Graphics (VIG) |  |
| 79 | Offshore Radiological | Like many other professionals in U.S.A radiologists are very expensive. On average a mid ranged radiologists costs around $400,000 per year for a hospital. In the current depressed U.S economy everyone is trying to cut costs, so are hospitals. Insurance companies don’t pay a penny more than what is the market rate for any medical procedure. As a result of all these pressures there a great demand for offshore radiological help. Like off shore call centers, hospitals in U.S are sending their radiological work to areas where they can find English speaking, competent radiologists at cheaper rates. India is one such location and Indian doctors are making good use of their IT infrastructure to promote their services. Dr. TanveerZubairi of Punjab Radiology is trying to develop such a center in Pakistan. He needs a complete solution where by radiological images ( mostly CT and MRI scans ) are downloaded from USA, interpreted and reported by competent radiologists here in Lahore and sent back to USA. All of this has to be done in the constraints of time, US medical related laws ( which are quite extensive ), client satisfaction etc. | Software Engineering | Programming, DB, OS |
| 80 | Speech Therapy for Speech Challenged Children of Pakistan | Children who are born with serious hearing disorders don’t develop speech abilities, even though their speech related physiological aspects are healthy. As a result they face a big challenge in the long run as far as their communication skills are concerned. Many opportunities available for ordinary members of society become out of reach for them. When such children are given hearing aids they face a very interesting problem. Since they had not heard and processed speech so they don’t know how to speak. They need specialized training to learn to speak. It is a very frustrating process; each word has be repeated thousands of time. This training is imparted by trained speech therapists. The job of a speech therapist is very challenging and as such there is a high rate of turnover in this field. Moreover in Pakistan the number of properly trained speech therapists is far less than what is needed. As a result a large number of children are unable to receive the professional training that they need to be able to speak properly. With the decline in cost of computing hardware it is now possible for the less fortunate ones to afford basic hardware, the problem is software. Almost all of speech therapy related software is proprietary and quite expensive, especially for those living in underdeveloped countries. Moreover language is also a problem. Majority of the proprietary speech therapy software is meant to teach English, which is not our mother tongue. This project is intended to fill this gap. | Software Engineering | Programming |
| 81 | Morphological Analysis of Human Sperms | This project will automate the pathological tests of human sperms by using video clips captured by digital microscope through morphological analysis. | Vision, Image & Graphics (VIG) | Digital Image Processing or Computer Vision |
| 82 | 3D Obstacle Avoiding Smooth Path Planning for a UAV | In this project, we will develop a 3D smooth and obstacle avoiding path planning algorithm for an unmanned aerial vehicle (UAV) operating in natural environment. This algorithm will be tested either through simulator or on small size helicopter. | Intelligent Machines and Robotics | Computer Graphics, Embedded systems, Micro processing interfacing |
| 83 | Swarm Management System (SMS) | Auto crowd management system by counting moving people using surveillance cameras is very useful, convenient and effective. Developed system will very intelligently manage the crowd of people on places having multiple entry/exit points and will keep the balance of people at every point. This project can further be extended for the security and many more applications. | Vision, Image & Graphics (VIG) | Digital Image Processing or Computer Vision |
| 84 | Mammography Visual Enhancement in Cancer Diagnosis | This project is on visual enhancement of MRI (Magnetic Resonance Imaging) for the convenience and accurate understanding of doctor. Enhanced image is also used to automate the diagnose process and grading of disease level. Results are also used as the second opinion. This project is addressing a very serious and rapidly spreading breast cancer not only in our society but all over the world. | Vision, Image & Graphics (VIG) | Digital Image Processing or Computer Vision |
| 85 | Remote Control NFC Enabled Smartphone | NFC (Near Field Communication) or Mobile RFID is integrated in most of the upcoming Smartphone, such as Samsung Google Nexus S. NFC feature works from a distance of around 20cm with passive RFID/NFC Tags having capacity of storing small amount of information. This information can be read by the NFC equipped Smartphone and further programmed to react (according to information available on RFID/NFC tag). Focus of this project will be on: Automatically launching Android Application by touching the NFC Tag, enabling Bluetooth and start communication with the Desktop Computer. Viewing Contents of Android Smartphone from the Desktop Computer via Bluetooth Controlling Android Smartphone from the Desktop Computer At least two applications would be required to develop, one for Android phone and the other for the desktop computer with whom it will communicate. | Software Engineering | Java, Android SDK, Eclipse, C# or Java (for desktop Application) |
| 86 | Enhancement and Grading of Retinal Images (EGRI) | Diabetic retinopathy is a condition where the retina is damaged due to fluid leaking from the blood vessels into the retina and patient may lead to blindness if untreated. As the part of a mega project at local hospital, students need to enhance and grade retinal images for diabetes retinopathy. | Vision, Image & Graphics (VIG) | DIP or CV |