

NOTABLE PROJECTS

ERP and Forms for National Rifle Association of India

Developing an industrial project for the NRAI, which is the epic-most body for managing shooting sport in the country. The application integrates all processes involved right from Competition planning, shooter's forms, generation of all documentation, import of all scores to generation and mailing of certificates. It also coordinates all scores and communications between state associations and the national federation.

Convocation Management Application for the Vidyalkar Institute of Technology

Developed an application for the institute for management of individuals during convocation ceremony for undergrads and graduates.

Instead of planning for the ceremony attendees, the software has empowered the institute for real-time planning. This enables excellent management and has saved the institute countless hours along with enhancing the prestige of the ceremony.

Networked application which allows self-check-in, real-time queue display (for management team), printing of check-in passes, barcodes for easy management of aiding management of every attendee and maximizing the utilization of the available space in the auditorium

(On going) Research on use of smart-phone camera and image processing as biometric reader for fingerprint

Currently researching on ways a normal smartphone camera can be used for capturing fingerprints and hence match individuals under the guidance of Prof.Sachin Bojewar . Developing smartphone cases with hardware (like prisms or glass) that would aid in the same process. This can be used as a low-cost method for acquiring fingerprints.

This research is Extension to the research paper "[Fingerprint Acquisition with a smartphone camera](#)" by Mr.Wout Oude Elferink at University of Twente, Netherlands .

Shared-Compiler Project

Developed a project for use in Labs for experiments. Instead of installing compilers/Interpreters on all the lab machines, the installation is done on single server and each user is provided with a separate web interface which allows *Syntax-highlighted* code editor and *Docker* based containers for executing the code on server.

Saved the institute time and efforts for installation of compilers/interpreters on each system.

Distributed Image storage and retrieval system.

A system written for storing and retrieving images in a distributed environment created using NGiNX, PHP, Node.js, Redis, MySQL, HTML5, jQuery and, CSS3. Images and thumbnails are stored and distributed over the network of computers.

Patient Management Systems for Hospitals

Application based on MS Access and VBA, allowing doctors in small hospitals to keep patient records. It manages prescriptions, advices, history, examinations and provides multi-lingual reports support.

Automatic retrieval of sample & result data from *BioRad[USA] D-10 Hemoglobin Testing system*.

Developed in-house systems to import and integrate data from the Machine which is used for pathological tests.

Exploit in Android 2.3 – MediaTek Devices and UBG ROMs

Developed a way which exploited Android 2.3 based on Mediatek platform, which allowed them to be rooted. This technique paved the way for rooting many android devices worldwide, which was not possible by any exploit then available.

Further Developed UBG Series of Custom firmware for a couple of android devices.

Exploit in Codevita – Tata Consultancy Services

Discovered a vulnerability in the “codevita” which is a global coding competition conducted by Tata Consultancy Services.

Automatic Flush and Lighting System

Used Arduino, ESP8266, Cap-Sense, Ultrasonic Distance meters to develop a system which allows automatic lights operation, automatic flush depending on user’s actions and logging using ingenious non-traditional techniques.

Currently researching ways for using thus obtained information to predict user patterns and implement neural network which would learn the patterns and hence use Artificial Intelligence to activate flush instead of using rigid instructions.

Bluetooth-LE Based Secure application

Wrote an IOS Application which secures (Locks) itself if the BLE Device is not in range, and unlocks on proximity. Use of BLE, various cryptographic techniques to prevent spoofing.

Founded “*The iBooks Initiative*” in the Institute

Ventured into iBook’s platform and developed high quality, interactive books covering university syllabus. Built and lead a team of 15 individuals for the same

IEEE – VIT Website Development.

Was Head of Web development committee of IEEE, Institute Chapter. The committee developed the first content management system under my leadership. We used PHP, HTML5, CSS3 and jQuery for the same.

Also, conducted many events and seminars during the period.