ARCHIT BUBBER

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Summary

Pursuing bachelor's in Computer Science Dept. of MSRIT, I've interest in reading and working on problems and developing faster yet simpler algorithms. I enjoy problem solving in general and identification of missed out cases.

Academic Projects and Research

Academics Projects-

- **Database management tool for college (MSRIT) data-**
  - Developed the front end and an algorithm for early detection of duplicate entry to prevent error generation during insert
  - Developed a functionality to change primary key as when required and updated the access for databases based on departments.
- Developed a Sudoku puzzle project using C.
- Developed a hand cricket game in Java.
- Developed an audio reactive keyboard lights script using Python.

Web Development Projects-

- Developed my Portfolio website:
  - Used w3.css for responsive web designing and developed static website and hosted on GitHub link.
- Developed Live location tracking website TrackMeRide.
  - It provides real time location and speed and uses "MapMyIndia API" for displaying map and marker. It uses React for updating marker position without refreshing page.
  - Developed using custom CSS for responsive web designing and Node.js in backend for processing requests, redirecting, and providing location data to frontend. The app was deployed using Heroku link.

Research Projects-

- Developed an application using Python for programming Neopixel LED's to display custom graphics and images. The matrix can be generated as per user demand style/pattern with provided dynamic button
- **Microprocessor Projects-**
  - **Developed a Tracking device:**
    - Used Sim800l for sending data to servers in form of http requests.
    - Uses Neo6m GPS module for accurate location and speed calculation
    - Provides Realtime tracking and Speed information.
    - Developed in coordination with TrackMeRide Website.
  - **Developed an Emergency Fall Detector wristwatch-**
    - Detected fall by calculating accelerometer and gyro value changes. Further, alerted about the accident to listed people by sending GPS coordinates to respond
    - Used mpu6050, NEO6M, GSM800a and Arduino LilyPad.
  - **Developed a Maze Solving Robot as part of a robotics contest-**
    - Implemented using LRSB algorithm, and calculated path using discreet mathematics equations like LBL=S.
    - Aimed to achieve the shortest path in least time.
  - **Developed drone and airplane using Atmel as flight controller-**
    - Built Transmitter and Receiver using Nrf24l01 with ranges up-to 1km and with minimum time consumption and max efficiency.
    - Further used MultiWii source code for Flight Controller and custom tuned PID's for best stability and ack capability for live battery voltage monitoring and safety warnings.

Skills

- **Fundamental Concepts:** Object Oriented Programming & Design, Data Structures such as Graphs, Trees. Algorithms (such as Sorting, Searching, Traversals etc.), Relational Databases and SQL, Mutex, Deadlocks
- **Languages:** Java, C, Python, Arduino
- **Full Stack:** HTML, CSS, JavaScript, Node.js, React JS, w3.css, bootstrap.

Extra-Curricular and Others

- Represented college at VTU south-zonal sports meet in 10km race.
- Core member and organizer of various treks as part of Nature's Club.
- Winner of State Level Bike Championship under 200cc category organised by KTM in 2017.