Education

Maharashtra Institute of Technology - Pune BTech Computer ScienceGPA: 7.5 - Till 5th Sem Aug 2022 - June 2026 BRPS - ICSE 10th-91.7%

Maharashtra·dhabalia.taksh@gmail.com·+91 7715958053

WORK EXPERIENCE

IIIT-Delhi

System Design and Embedded Software Developer Intern Jan - Aug 2024

- Cloud , Micro-controllers , Low level Design , System Architecture, GitHub

- Designed and implemented a water management system with an app and cloud integration.
- Developed the overall hardware and cloud architecture, deployed on STM32 micro controllers.
- Developed the entire app for the project written in Dart using the Flutter framework. Used Firebase for the backend .
- Demonstrated skills in micro-controller architecture , low-level embedded systems programming , system design and architecture, PCB designing and Flutter development.

Team Bolt

Vice Lead, Electronics June 23’ - Jan 2024

- Electrical Systems , Micro-Controllers , Simulations

- Secured All India Rank 4 in FMAE Moto Student India - Electric Super bike Building Competition and overall rank 2 in cost report and endurance test.
- Led the innovations and electronics department, developing 4 new innovations including GPS tracking and SOS impact sensors.
- Contributed to wiring and circuitry for GLVS and HVS systems.

EDUCATION

PROJECT

Tarzan August - Current 2024

- Developing an autonomous vehicle portable module for non-ADAS enabled cars.
- Uses an app to input images and run custom deep learning models [YOLOv8] to make decisions for car
- steering angle, acceleration, and braking values.
- Takes surroundings like other cars , potholes , barricades etc. to make its decisions
- Worked in making its simulations on MATLAB using pure-pursuit modelling .

IRIS Website August- September 2024

- Developed an official site for the club, handling multiple concurrent real-time payments and updating entries
- for events.
- Utilized Razorpay, Supabase Database, and Vercel for deployment.

Real-Time Parking Management System March - May 2024

- A system that takes in a live video feed and allocates parking based on parking availability .
- Uses OpenCV and Threading with YOLOv8 for real-time allocation, speeding up the process by 40%.
- Implemented using CCTV cameras and Raspberry Pi.

Doom on Web Jan - May 2024

- Achieved a 30% performance improvement in FPS and a 10% improvement on web platforms by
- implementing core algorithms natively. .
- Leverages Ray-Casting for its core engine algorithm and uses BFS and DFS for its NPC algorithms
- Developing multiplayer and squad-up features (WIP).

Music_Gen June - Dec 2023

- Produced music from input using LSTMs in real time.
- Utilized open-source KERN datasets for German songs to generate unique melodies based on the input
- provided, giving the continuations of them as a result . Skills
- Languages Python, C, C++
- Packages Music21, OpenCV, Pandas, NumPy, TensorFlow, PyGame
- Electronics Raspberry Pi, STM32, Node-RED, ESP and Arduino Family
- Software MATLAB, SolidWorks, Blender
- Communication Protocols MQTT, LoRaWAN, ESP-Now, Cellular, NB-IoT

SKILLS

- Leadership: Led team of 15 students in electric super bike competition for the innovations department and secured top rankings in FMAE Moto Student India. Currently eading a team of 40 students as President , doing various tasks involving guiding projects , research papers and non-technical events
- Communication: Effectively conveyed complex technical concepts to non-technical team members and stakeholders.
- Problem-Solving: Demonstrated ability to troubleshoot issues in embedded systems and optimize algorithms for real-time performance.
- Team Collaboration: Worked closely with cross-functional teams on various projects, including autonomous vehicles and the IRIS Website .
- Time Management: Managed multiple projects, competitions, and academic workload, consistently meeting deadlines and maintaining the standard.
- Adaptability: Quickly learned and integrated new technologies such as Flutter, Firebase, and STM32 in the short notice provided. Also pivoted from existing tech stack to newer approaches in my internship.