Marikundam Harshitha

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Personal Profile

Innovative student leveraging Undergrad in Electronics Communication Engineering .Possess a strong foundation in both hardware and software, with expertise in using controllers and processors such as Arduino UNO and Raspberry Pi. Have an ability to learn quickly and adapt to new technologies, as well as a strong attention to detail and a commitment to quality.Excited to continue exploring new frontiers in the field of electronics and communication engineering.

Education

B.Tech. in Electronics Communication Engineering (cgpa:9.04) *Hyderabad, India*

Jawaharlal Nehru Technological University Hyderabad *Aug. 2019 - 2023*

- Relevant coursework:
  - *Electronics*: Antennas Propogation,Basic Electrical Engineering,Control Systems, Digital Signal Processing, Microprocessors and Controllers,VLSI Design
  - *Communication*:Computer Networks,Network Analysis ,Cellular Communications
  - *Computer Science*: Probability & Statistics, Data Structures, Artificial Intelligence,Digital Image Processing

High School(cgpa:98.3) *Hyderabad, India*

Narayana Junior College *Aug. 2016 - June 2018*

Work Experience

NG-RAN IIT Hyderabad *Kandi, Sangareddy, India*

Future Wireless Communication Intern *Feb. 2023 - present*

- Contributed to product features, system reliability and designing.
- Worked on environments like Termux, Ranger and Latex for software developing .
- Encouraged new best practices and patterns for digital designing of products.
- Supported the Future Wireless Communication project.

Divecha Centre for Climate Change *IISc.Bangalore, India*

Research Intern *Dec. 2021 - Oct. 2022*

- Worked on data aquisition,coding,literature survey,data visualization and published papers under Prof.Rohit Chakraborty.
- Participated in conferences representing as one of the authors.
- Studied the climatology of different areas , developed a data analysis sheet.
- Leveraged a variety of technologies such as Matplotlib, Pandas and Azure.

Leap Robots *Hyderabad, India*

Robotics Intern *April. 2022 - May. 2022*

- Experienced with a range of sensors,micro-controllers and processors.
- Deployed small-scale initiative using Internet of Things.
- Worked on raw embedded systems using 8086 and 8085.
- Explored 3D printing techniques and optimization of different designs.

Verzeo *Online*

Machine Learning Intern *Feb. 2020 - July. 2020*

- Worked on data science pipeline and deployed a model using various algorithms.
- Learnt the cutting-edge programming languages and tools as in Python,AI and Neural Networks.
- Implemented Aging Signs Detection Model that can detect and localize the aging from image of a person.
- Exposed to emerging technologies as in Artificial Intelligence,Neural Networks.

Projects

Automatic Music Generator *Online*

Keras,Neural Networks *Nov. 2022 - Present*

- An autonomous music generator that can play any style, genre, or mood
- Platform makes use of Artificial Neural Networks, which were inspired by the Mubert music generator, but here applying for Karnatik music.
- Worked on vast library of audio samples that are then combined in real-time to create new and unique music using pandas.

Home Automation using IoT *Online*

Arduino UNO,Node MCU *Feb. 2022 - April. 2022*

- Worked on creating a power-saving lightbulb based on embedded electronics, more of a green-building idea.
- Used sensors, gates, mini-solar panels, and eventually a buletooth door monitoring system to implement
- Extended the idea more efficiently using IoT where one can control most of the electronic devices on cloud

Age Detecting System *Online*

ML,AI,Python,Tensor Flow *March. 2020 - July. 2020*

- Created a model that can identify the ageing and its location from a photograph of a person with wrinkles.
- Pre-trained Efficient Net Models that comprise of the codes for the detection of wrinkles, dark spots and puffy eyes are downloaded.
- For analysis, training, and testing, a dataset made up of facial images with a variety of dark spots, wrinkles, and puffy eyes is presented.

Course Project

Wireless Power Transfer Through Router *JNTUH*

Minor Project *Sept. 2022 - Jan. 2023*

- The project's goal is to make battery-free, long-lasting wireless networks possible. To this end, a call for "development of wireless charging system by harnessing existing Wi-Fi networks" using Simulink model-based design has been issued.
- The main factors taken into account are gain, radiation characteristics, Figure of Merit, bandwidth, and matching efficiency.
- We have specifically demonstrated that the ubiquitous Wi-Fi router, which is a component of wireless communication infrastructure, can offer far field wireless power without materially degrading the network's communication performance.

Weather Monitoring Drone *JNTUH*

Major Project *Jan. 2023 - Present*

- Working on building an Autopilot Drone capable of measuring climate parameters like Temperature, Humidity and Air quality using Arduino sensors for accurate weather forecasting.
- Building a system that can measure meteorological parameters like temperature, humidity and Air quality at any altitude.
- To build a Smart drone that can go anywhere (Near buildings, structures, urban environments etc.) and measure the required parameters.
- Using a combination of GPS, inertial navigation, and other sensors to ensure that the drone stays on course and maintains a stable flight path. The flight control system also allows the drone to be programmed to follow a specific flight plan, which can be used to collect data from specific locations.

Publications

1. Chakraborty, R., P. S. Menghal, M. Harshitha, and M. A. Sodunke. "Climatology of lightning activities across the Equatorial African region." In 2022 3rd URSI Atlantic and Asia Pacific Radio Science Meeting (AT-AP-RASC), pp. 1-4. IEEE, 2022.
2. Chakraborty, R., P. S. Menghal, M. Harshitha, and M. A. Sodunke."Long term variability in lightning occurrences over the Congo Basin Africa."In 21st National Space Science Symposium.

Skills & Technologies

Languages: Java, Python, JavaScript, HTML/CSS
Frameworks: React.js
Developer Tools: VS Code, Visual Studio, PyCharm, IntelliJ,Vivado
Libraries: pandas, Matplotlib,Keras
Other skills:Artificial Intelligence,Machine Learning,UX Designing,Mern Stack,Internet of Things,BlockChain
Controllers/Processors:Arduino UNO, Raspberry Pi

Certifications

1. The Complete 2022 Web Development Bootcamp -Udemy
2. The Complete Facebook Ads Marketing Course 2021 - Udemy
3. Foundations of User Experience (UX) Design - Google
4. AI For Everyone - DeepLearning.AI
5. Machine Learning with Python - Verzeo
6. Micro Mechatronics and Soft Robotics - IIIT Indore

Further Tentative Interests

- Semiconductors and its applications
- Energy conservation in electronics
- Data Science and Image segmentation
- Robotics