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SKILLS

C Programming, Object Oriented Programming, C++, Data Structures and Algorithms, Digital Circuits, Circuit Analysis, Analog Electronic Circuits, ARM LPC2148 Programming, 8051 Microcontroller and Assembly level Programming, Control Systems, Linear Integrated Circuits, Digital System Design using Verilog Programming, CMOS VLSI Circuits, Simulation using Cadence Virtuoso Software, Operating system, Real time Operating system, Machine Learning, HTML basics, CSS, JavaScript basics.

EDUCATION CGPA (till the end of 5th SEM) - 9.26

- ❖ B.E. Electronics and Communications – kle technological university hubli
- ❖ 1st and 2nd PUC - Aryabhata PU science college dharwad
- ❖ Upto 10th standard – Netaji subhas chandra bhose kannada medium school

ACADEMIC PROJECTS

Project 1 | [Active Filter Design Second Order Low pass and High Pass](#)

- Firstly, we have discovered the universal active filter / state variable filter in the textbooks and some research papers. We have thoroughly read the construction and working of that universal filter.
- Next, we have simulated and verified the working of the universal filter using Ideal Operational amplifiers in the cadence virtuoso tool.
- Then We have designed the Two stage differential amplifier with certain specifications and verified the working of that amplifier in cadence tool, that is its giving correct gain and bandwidth that is required.
- Finally, we have replaced the Ideal operational amplifier with two stage differential amplifier and simulated the working of that overall circuit, as a result we got the all-filter responses (low, high and band pass).

Project 2 | [Denoising of ECG signal to Predict Heart rate](#)

- Firstly, we have collected the ECG dataset from the physio net organization and done the frequency analysis of ECG signal using Fast Fourier Transform (FFT) and Discrete Fourier Transform (DFT).
- From the frequency analysis we come to know that the frequency range of that ECG signal and how the noise is distributed in the signal, also checked the frequency range of QRS components because the heart rate is determined based on that component only.
- Next, we have removed the noise and extracted the QRS components from our ECG signal using Impulse Invariance Response (IIR) filtering method and Finite Impulse Response (FIR) filtering methods. Selected the best among all

filtering methods and predicted the heart rate with the help of R peaks of ECG signal.

Project 3 | [Agri Predict: Crop Selection through Neural Networks For Sustainable Agricultural Growth](#)

- Agri predict is a novel framework aimed at promoting sustainable agricultural growth through informed crop selection. Due to educational constraints and limited access to precise information, farmers in India often make suboptimal crop choices, overlooking essential factors like soil, climate, and environmental conditions.
- This leads to reduced yields and financial losses. To address this issue, we propose the use of machine learning algorithms, specifically Neural Networks, to predict optimal crop selections based on environmental and soil parameters. The model considers critical factors such as Nitrogen, Phosphorus, Potassium, Temperature, Crop Type, Humidity, Rainfall, and pH.
- The results demonstrate an impressive accuracy of over 98%, highlighting the effectiveness of Agri predict in assisting farmers in making informed decisions about crop selection.

Project 4 | [Ultrasonic Motor control: Bridging Distance with Precision](#)

- We have designed a system that is robotic arm whenever it detects the obstacles in the front while travelling in the path then it takes the turn clockwise/anticlockwise direction.
- We have implemented this system using the ARM Microcontroller (lpc2148 board), we are checking the distance of obstacle from the robotic arm with the help of ultrasonic sensor.
- We have implemented this system in Cortex M3 development board also, we have used the Tasks and Event registers in the code.

HOBBIES

- ❖ Playing games like Chess, Cricket
- ❖ Daily exercise
- ❖ Watching movies

Certificates

<https://github.com/Yatiraj2003/Certificates>