VARUN KALLA | EC UG Student | RGUKT BASAR

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Objective: Seeking a challenging position in core electronics and communication field, leveraging my skills in circuit design, ASIC/FPGA implementation, verification, Microcontrollers & Signal Processing to contribute effectively to cutting-edge projects and further enhance my expertise in the core domain.

Program	Institute	Year	CGPA
B.Tech (ECE)	Rajiv Gandhi University of Knowledge Technologies, Basar, TS	2024	8.63
PUC (M.P.C)	Rajiv Gandhi University of Knowledge Technologies, Basar, TS	2020	9.31
SSC	Telangana State Model School, Lachapet, Siddipet, TS	2018	9.8

AREAS OF INTEREST

- VLSI Circuit Design
- Embedded Systems & IoT
- Signal Processing

INTERNSHIPS

- **Design of BCH Encoder and Decoder using Verilog HDL and Implementation on FPGA Board**

  NIT-Trichy, TamilNadu   [*May'23 - Jun'23*]

  BCH codes are one of the powerful error correcting codes we are using in most of the Digital Communication applications. The BCH code architecture is designed using hardware description language (HDL) called **Verilog**, synthesized and simulated using **Vivado** and implemented on the **Artix-7 (Basys-3) FPGA board**.

- **Microwave Oven Functionality Design and Simulation using PIC uC in PICSim Lab using Embedded C**

  Emertxe Information Technologies, Bangalore   [*Aug'23 - Oct'23*]

  This is a simple hardware simulation project in which the functions of a Microwave Oven are Implemented.

UNIVERSITY PROJECTS

- **CORDIC based Design and implementation of Resource-Efficient HH Neuron model on FPGA (Ongoing)**

  [*Oct'23*]

  HH neuron is a biological neuron model which plays crucial role in simulating the behavior of biological neurons on hardware (**FPGA**) using **Verilog HDL**. The behavior of the neuron is based on input potentials and complex math calculations. The design of complex math blocks is based on **CORDIC algorithm** which reduces the hardware requirement and clock cycles.

- **Smart Home with Google Assistant and Node MCU**   [*July'23*]

  Developed a custom Home Automation project in which we can control home appliances with google assistant and google home mobile application and web server from any place in the world.

- **Weather Monitoring System Using Node MCU and ThingSpeak Server**   [*Mar'22*]

  This project is a simple Weather monitoring system which displays current temperature, moisture and the water level value of a place in the server, designed using **NODE MCU**, **Thingspeak server** and Arduino IDE.

- **RADAR Prototype using Arduino**   [*Aug'22*]

  The project is based on design of RADAR prototype using Arduino. The IR sensor detects the objects and it sends signals to the Arduino and the position is visualized in monitor.

TECHNICAL SKILLS

- **Programming**: Verilog HDL, Python, C, Embedded-C, Java (OOPS)
- **Software Tools**: Vivado, EDA Tools, MATLAB, MPLAB X IDE, Arduino IDE, PICSim Lab, MS Office
- **Hardware Platforms**: FPGA, ESP32/ESP8266, Arduino, 8051 Microcontroller

CERTIFICATIONS

- Qualified **GATE-2023 Electronics & Communication** organized by IIT-KANPUR.
- NPTEL certificates in **Principles of Signals & Systems** with **68%**, **Programming in JAVA** with **88%**.
- Participated and Volunteered 7 days Workshop on "**FPGA architectures and Verilog Programming**" at NIT Trichy, TamilNadu sponsored by **SERB, INDIA**.
- **TCS iON Career Edge – Young Professional course** certificate on soft skills.
- Secured district first place and participated in State Level **Chekumukhi Science Talent Test**, 2016.
- Qualified National Means cum Merit Scholarship Test (**NMMS**) in 2015.