

# Manikandan Gunaseelan

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## EDUCATION

### **BITS Pilani, K K Birla Goa Campus**

*BE (hons) Electronics and Communication Engineering*

Current GPA : **7.66/10**

*Aug. 2018 – Present*

### **DAV Public School, Pune**

*Grade XII*

Score : 92.8%

*May 2018*

### **DAV Public School, Pune**

*Grade X*

GPA : 10/10

*May 2016*

## SKILLS AND COURSEWORK

**Relevant Coursework:** Computer Architecture, Digital Design, Microprocessor Programming and Interfacing, Digital Communication, Cryptography, Digital Signal Processing, Analog Electronics

**Technical Skills:** Verilog, C, C++, Python, GNU/Linux, Bash Scripting, MATLAB, Simulink, LTSpice, Xilinx Vivado, ModelSim, Cadence Virtuoso, Proteus 7

## PROJECTS

### **Implementation of MIPS Processor in Verilog** | *Computer Architecture*

Mar 2021 – Apr 2021

- [GitHub Links](#) : [pipelined-processor](#) and [single-cycle-processor](#)
- Verilog implementation of pipelined and single-cycle (modified) MIPS processors
- Single cycle processor had a floating point addition instruction which used a separate IEEE754 Floating point adder module
- Pipelined processor with a forwarding unit, hazard detection unit and basic branch prediction to tackle data and control hazards
- Understood the basics of processor working and design, the differences between single-cycle and pipelined processors, and the handling of various hazards that arise when working with a pipelined processor

### **Parking Garage System using LM741 Op-Amp** | *Analog Electronics*

Mar 2021 – Apr 2021

- [GitHub Link](#) : [parking-garage-system](#)
- Using Op-Amp 741, designed a parking garage system which counts the number of cars entering and leaving the garage and displays whether the garage is full (or half full) on LEDs at the entrance
- Simulation of the design on LT-Spice and testing the design for different inputs

### **Spirit Level Reaction Time Tester** | *Microprocessor Programming*

Mar 2020 – Apr 2020

- [GitHub Link](#) : [spirit-level-tester](#)
- Implemented a reaction time tester on the Intel 8086 Microprocessor which checks a person's sobriety based on their reaction time in pressing a button upon seeing a sequence of LEDs
- Also included a simulation on Proteus 7 using the x86 Assembly language

## EXPERIENCE

### **Summer Intern**

May 2020 - June 2020

*Data M Intelligence*

*Hyderabad, TS*

- Learnt about SEO techniques and performed lead generation for the markets of hundreds of products over a six week period
- Automated a task of updating multiple services and search engines about changes to the website using the Selenium library of Python

## CERTIFICATIONS

### **Google IT Support Professional Certificate** | *Coursera*

July 2020

- Included courses on Networking Fundamentals, Operating Systems, System Administration and IT security
- Verilog implementation of pipelined and single-cycle (modified) MIPS processors
- Hands-on experience in the form of virtual labs conducted on Qwiklabs

### **Introduction to Data Analytics for Business** | *Coursera*

June 2020

- Learnt about the data analytics practices executed in the business world - how data is created, stored, accessed and then later analysed
- Involved a module on the basics of SQL