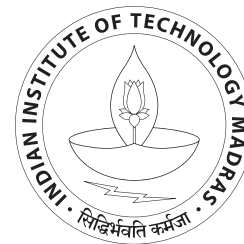


Akilesh Kannan



II Year Undergraduate
Dept. of Electrical Engineering
Email: akilesh@smail.iitm.ac.in
Phone: +91 98403 72545
Web: aklsh.github.io

Education

Year	Degree/Certificate	Institute	CGPA/%
2018 - Present	Dual Degree (B.Tech + M.Tech)	Indian Institute of Technology Madras	9.11/10
2018	CBSE (XII)	Maharishi Vidya Mandir, Chetpet, Chennai	97.2%
2016	CBSE (X)	Vidya Mandir Estancia, Chennai	10/10

Scholastic Achievements

- Secured **All India Rank 592** in **JEE Advanced 2018**.
- Achieved **All India Rank 1319** in **JEE Mains 2018**, out of 1.4 million candidates.
- Amongst the **top 300** students selected for **Indian National Astronomy Olympiad (INAO)**.
- Received **Certificate of Merit** from **CBSE** in **Mathematics** for being among the **top 0.1%** of successful students in AISSCE.
- Recipient of the prestigious **KVPY Fellowship** by Dept. of Science and Technology, Govt. of India.

Key Projects

- **8-bit Microprocessor** *Dec' 19* || Ongoing
 - Implementing an 8-Bit microprocessor (non-pipelined) using Verilog HDL.
 - Supports arithmetic, logic and branch instructions.
 - Writing an assembler in python to convert assembly language into machine code instructions.
- **Random Number Generator in ARM Processor** *Course Project* || Microprocessors
 - Studied about various pseudo random number generators (PRNGs) like LFSRs, Mersenne Twister, Linear congruential generator and also about True random number generator implementations.
 - Implemented a random number generator using: **(a)** external temperature as noise source **(b)** a white noise generator circuit
 - Performed a Monte-Carlo estimation of π using the generated random numbers.
- **Elevator Controller using ATMega8** *Course Work* || Microprocessors
 - Implemented a controller for a 'Ground and 3 floors' elevator using ATMega8.
- **Symphonies of the EM Universe: Whistlers, Hisses and Dawn Chorus** *Course Work* || Engineering Electromagnetics
 - Studied about the electromagnetics involved in various natural atmospheric VLF emissions like whistlers, sferics, dawn chorus and prepared a poster on the same.
- **Huffman Coder** *Summer' 19*
 - Implemented a file compressor that compresses a file using the huffman coding algorithm.
- **Open-Source Verilog Modules** *Summer '19*
 - Created an open-source repository of learning resources for Verilog HDL.
 - Includes various modules like Adders, Multipliers, Debouncers etc.

Technical Skills

- **Programming Languages:** C, C++, Python [*Libraries:* numpy, scipy, matplotlib, opencv¹, scikit-learn¹], Embedded C¹, Bash, Verilog HDL, Assembly (AVR, ARM)
- **Tools and Softwares:** Arduino, Spartan-3e FPGA, Autodesk Eagle, Keil μ Vision IDE, Xilinx ISE, gnuplot, L^AT_EX, git
- **Others:** Adobe Photoshop, Adobe Illustrator, HTML, CSS

¹beginner

Courses Taken

- **Core Courses:** (i) Numerical Methods (ii) Digital Systems (iii) Signals and Systems (iv) Microprocessors (v) Electric Circuits and Networks (vi) Engineering Electromagnetics (vii) Hardware Modelling using Verilog (NPTEL)
- **Other Courses:** (i) Probability, Statistics and Stochastic Processes (ii) Functions of Several Variables (iii) Series and Matrices (iv) Principles of Economics (v) German I

Positions of Responsibility

- **Electronics Module Member, Team Abhiyaan** *March'19 - Present*
 - Worked on the design of the **all-in-one PCB** containing the motor drivers, the micro-controller for communicating with the on-board computer and also **improved the safety aspects** of the existing PCB.
 - Learnt about **drive-by-wire systems**.
- **Design Co-ordinator, Saarang 2020** *May'19 - Present*
 - Designed **posters and t-shirts** for the annual cultural festival of IIT Madras, Saarang and the cultural clubs under Sangam.
 - Made a few illustrations for
- **Workshops Co-ordinator, Shaastra 2020** *June'19 - Present*
 - Managed workshops on *Artificial Intelligence and Data Mining*, *Audio Signal Processing* and *PayPal Integration* which generated a **revenue of Rs. 1,00,000+** for Shaastra 2020.

Extra-Curricular Activities

- **Mentor** at **Avanti Fellows, Pondicherry Chapter**, an initiative to guide students of class 11 and 12 preparing for JEE.
- **Volunteer** for Evolve department of **Shaastra 2019**, the technical fest of IIT Madras.
- Engineered a **Bluetooth-controlled robot** in Robowars, organized by **CFI, IIT Madras**.