Sahukari Chaitanya Varun

Bachelor of Technology (Honors)
in Electrical Engineering
Indian Institute Of Technology, Hyderabad

+91-7095075634
ee19btech11040@iith.ac.in
GitHub | Chaitanya Varun
LinkedIn

EDUCATION

Degree	Institute/Board	CGPA/Percentage	Year
(Hons) Bachelor of Technology	Indian Institute of Technology, Hyderabad	9.35*	2019-2023
XII	Telangana State Board of Intermediate Education	98.2%	2019
X	Board of Secondary Education, Telangana	10	2017

EXPERIENCE

- **Teaching Assistant** — *Aug 2022 - Dec 2022*
  Data Structures and Applications — IITH
  – Tutoring the students taking the course ID2230

- **Oracle** — *June 2022 - July 2022*
  Project Intern — Bengaluru
  – Working in the Fusion Analytics Warehouse (FAW) Team
  – Detection of Susceptible Actions through analytical means.

- **JTG,IEEE IT SoC Summer School** — *June 2022*
  Student Attendee — IIT Mandi
  – Attended lectures by renowned mathematicians on the advance topics of information theory

- **IEEE, SP Cup** — *May 2022*
  World-wide first runner up. — International
  – Worked on speech spoof attribution methods. Presented our work in ICASSP 2022, Singapore.
  – The same work poster presented at Purdue Graduate Showcase event won the People's Choice Award

- **DRDO, Advanced Systems Laboratory(ASL)** — *Dec 2021 - Jan 2022*
  Winter Intern — Hyderabad
  – Worked in the domain of Radar Signal Processing

- **5G Testbed - WiSig Networks** — *June 2021 - August 2021*
  Project Intern — Hyderabad
  – Worked in the Physical Layer : IP Core design with Vivado HLS and Embedded programming

- **Flipkart Grid-3 Hackathon** — *Present*
  Team Associate of final round qualifying team in the nation — Hyderabad
  – Worked in domains of Image segmentation and processing, chassis design, and hardware assembly

- **Inter IIT - Engineers Conclave** — *2020*
  Part of IITH Contingent — IIT Kharaghpur
  – Presented Automated Sudoku Solver using CNN and backtracking algorithm.

PROJECTS

- **BIPED Robot***
  Working on the vision aspect of a BIPED Robot
- **AI Living Lab for GPAI***
  Working on creating a platform for collaboration amongst labs.
- **3D Image Registration for OCT volumes***
  Implementing a tool for providing volume registration in collaboration with University of Pittsburgh
- **Path Navigation Setter**
  Implemented gyro-based path correction for straight moving bot
- **Indo-Swiss Virtual Sustainability Challenge**
  Developed a proof of concept for the problem of sustainable fabrics industry with cross-country collaboration.
- **Project Album**
  Worked on PhotoClassifcation using OpenCV and Deep Learning.
- **SIR Pandemic simulation**
  Performed a Covid Simulation using Data Structures (Graphs,Queues) as a part of Academia
- **Hardware Calculator**
  Built a hardware calculator using ATmega328P,avr-gcc, oscillators and other basic electric components as a part of academia
- **Voice Controlled Car Bot**
  Built a Voice Controlled Car using feed-forward linear layer written from scratch using numpy and scipy as a part of academia.
- **Drone**
  Built a auto-pilot drone as a part of academia using MissionPlanner
- **Finger Print based Security system**
  Developed it as a team for an independent project using arduino, servos and other basic electric components.
- **Image Deblurring using Gyro-data**
  Implemented a GAN based architecture to deblur images using the IMU readings(gyroscope) of the capturing device.

PUBLICATIONS

- **Evince the artifacts of Spoof Speech by blending Vocal Tract and Voice Source Features, 2022**
  - Joint work done with **Dr K Sri Rama Murthy**, IIT Hyderabad, India.
  - Submitted to **IEEE Transactions on Information Forensics and Security** as **First Author**. [pre-print]
  - We worked on developing a DNN model for classifying spoof algorithms, we exploited the framework of Linear Predictive Coding to enhance the artifacts of spoof signals.
  - The DNN's attention focuses at the transitions of the phonemes for discrimination which depicts the failure of current speech generation algorithms.

TECHNICAL SKILLS

- **Programming Languages**: Python, C++,C,Matlab,Octave
- **Micro-controllers handled**: Arduino, Raspberry Pi
- **Operating Systems worked on**: Windows10, Linux(Ubuntu)
- **Electronic Simulators worked with**: LTSpice, NGSpice
- **CAD Software worked with**: KiCAD, Solid Edge

RELEVANT COURSES

- **Communication Technologies and IoT**: Digital Modulation Techniques, Communication Systems, Introduction to Drones, Internet of Things(IOT)
- **ML and Computing**: Introduction to Computing, Introduction to AI and ML, Introduction to Modern AI,Certified in Python, Intro to Machine Learning, Pandas, Data Visualisation, Intro to Deep Learning and Computer Vision in Kaggle
- **Signal Processing and Information Theory**: Matrix Analysis, Signals and Systems, DSP, Advanced DSP, Data Analytics, Random Processes, Information Sciences, Pattern Recognition and Machine Learning, DSP Lab, Introduction to Group Theory, Source Coding, Channel Coding, Convex Optimization, Concentration Inequalities, Intro to Sub-Modular Functions, Intro to Statistical Learning*, Topics in Signal Processing*
- **Computer Science Courses**: Introduction to Data Structures, Linear Optimization, Data Structures and Algorithms
- **Control Theory**: Network Theory and Synthesis, Control Systems, Certified in Matlab Onramp, Mathworks,Advance Control Theory*
- **Digital Electronics**: VLSI Design, Intro to HDL, Digital System Design, ADLD, Semiconductor fundamentals and electronic devices, Electric and Magnetic Circuits
- **Analog Domain**: Integrated Circuits for Wireless Communication, Analog Circuit, Analog lab, Analog Electronics

POSITIONS OF RESPONSIBILITY

- **SciTech** ,Coordinator (present mentor) for Elektronica(2021-22), Core in Robotix and Elektronika(2020-21)
- **Cultural** ,Core of Irshaad-Stan Up Domain(2020-21)
- **Elan nVision Fest**,Sponsorship Coordinator(2020-21), Event Organizer of Elan-e-Jung(2019-20)

SCHOLASTIC ACHIEVEMENTS

- **Recipient of AFS JENESYS(Japan-East Asia Network of Exchange for Students and Youths) scholarship.**, *2022-23*
- **Awarded Academic Excellence Award on 14th Foundation Day of IITH**, *2022*
- **Selected as a Project Intern at Oracle in Server Technology and was offered the full-time role.** , *2022*
- **Pursuing Honors in Electrical Engineering**, *2021*
- **Secured AIR 1702 in JEE Advanced** , *2019*
- **Two times AMTI round-2 qualifier**, *2017,2016*

PROFILE

- I am a person passionate about technology and interested in solving problems and challenges in varied domains.
- I am a persistent learner of new works and a collaborative team player in diverse projects.
- I have been working on research problems in the areas of robot vision, speech, and medical imaging. My interests align more with cognitive sciences, machine learning-signal processing, applied statistical analysis, and robotics.

MISCELLANEOUS

- **Part of Shufe Crew - the dance club(2019-20)**,
- **Part of Milan(Inter Hostel League)-2021 in dance, drama, and badminton team**,
- **Winner of SciTech General Championship in Milan(2022), Gold Medal in RC car racing, Bronze Medal in robosoccer**,
- **NSO Badminton.**,