



INDIAN INSTITUTE OF INFORMATION TECHNOLOGY, NAGPUR

AMAN SONI

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CAREER OBJECTIVE : To secure a responsible career opportunity where I can contribute my skills to synchronize with new technology while being resourceful, innovative and flexible.

ACADEMIC QUALIFICATION

Enrollment no : BT16ECE014

Branch : Electronics and Communication Engineering

Current CGPA : **8.08/10**

QUALIFICATION	INSTITUTE	YEAR	SCORE/CGPA
B. Tech	IIT Nagpur	2016-2020 (expected)	8.08 of 10 (after 6 semesters)
CLASS XII(HSC)	R.L.V.M, Hathras (CBSE)	2015	95%
CLASS X(SSC)	R.L.V.M, Hathras (CBSE)	2013	10/10

INTERSHIPS

Siemens Healthineers

Bangalore, India

Innovation Intern

(July 2019 – Present)

Currently interning at Siemens Healthineers in the Innovation Think Tank Department and will be working on different technologies like Machine Learning, IoT and Software Development using C# in the healthcare domain.

Persistent Systems

Nagpur, India

Project Trainee

(June 2019 – July 2019)

Pursued training in the field of Machine Learning with python and undergone various assessments during the training period.

E&ICT Academy, IIT Guwahati

Guwahati, India

Research Intern

(May 2018 – July 2018)

Worked on Volt-spot Simulator. Implemented Cross-layered voltage stacking charge recycled 3-D IC power delivery network on volt-spot. Analyzed and studied various effects such IR drop, electromigration and thermal effects while placing TSV in 3D IC. Modeled and optimized algorithm for TSV placement in 3D ICs.

PUBLICATIONS

- Aman Soni, Sahil Deshmukh and Somesh Kumar," A shortest Path Algorithm for 3D Integrated Circuits TSV Assignment", IEEE Electrical Design of Advanced Packaging and Systems (EDAPS) Symposium-2018. 18 December 2018, Chandigarh.

PROJECTS

- **Restaurant Recommender System** (May 2019 – June 2019)
Restaurant recommender system is a machine learning model which recommends restaurants based on user's likes and dislikes, multiple parameters and his previous interest data.
- **Segmentation of Brain Tumor from MRI Images.** (Jan 2019 – Feb 2019)
Advisor – Dr. Ankit Bhurane, Assistant Professor, IIIT Nagpur.
This project segments the tumor from MRI images using k-means, watershed, MSER, Otsu's thresholding and graythresh segmentation techniques. Normalized cross correlation technique is also performed to compare the extracted tumor with the template tumor and achieved an accuracy of 85% in extracting the right tumor from brain images.
- **Implementation of Deep Convolutional Neural Network for the Automated Diagnosis of Congestive Heart Failure Using ECG Signals.** (Aug 2018 – Oct 2018)
Advisor – Dr. Ankit Bhurane, Assistant Professor, IIIT Nagpur.
Implemented a Convolutional Neural Network model that can be put into practice and serve as a diagnostic aid for cardiologists by providing more objective and faster interpretation of ECG signals.
- **Facial Expression Based Music Player.** (Sep 2018 – Oct 2018)
Advisor – Dr. Ankit Bhurane, Assistant Professor, IIIT Nagpur.
In this project the smile, yawning and sad expressions of the user were detected using OpenCV and accordingly the music was played according to the expression of the user. An algorithm is used to classify the human expressions and play a music track as according to the present expression detected.
- **Implementation of cross-layered 3D IC power delivery network.** (May 2018 – July 2018)
Advisor – Dr. Gaurav Trivedi, Associate Professor, IIT Guwahati.
Proposed an efficient integrated algorithm for TSV placement and routing techniques in 3-D ICs. Worked on Volt-spot Simulator. Implemented Cross layered voltage stacking charge recycled 3-D ICs power delivery network on volt-spot.
- **Coverage hole and boundary nodes detection in wireless sensor networks.** (Jan 2019 – Feb 2019)
Advisor – Dr. Prabhat Sharma, Assistant Professor, VNIT Nagpur.
In this project we have implemented an algorithm using the properties of empty circles to evaluate whether coverage holes exist or not in WSNs and to identify the exact nodes on the boundaries of holes. Our algorithm is divided into two phases: (1) coverage hole detection and coarse boundary nodes clustering and (2) boundary nodes refining.
- **Smart Door Opening and Closing System.** (April 2018 – May 2018)
Advisor – Dr. Ankit Bhurane, Assistant Professor, IIIT Nagpur.
This project deals with an interesting manner of security access-based door system using Arduino and RFID Technology. An automatic system to open the door, the user will have to first scan the right tag and then he will have to enter the correct password.
- **Detection of sleep apnea in single channel ECGs.** (July 2018 – Sep 2018)
Advisor – Dr. Ankit Bhurane, Assistant Professor, IIIT Nagpur.
Single channel ECGs from the Marburg Sleep Laboratory were analyzed. Features were extracted from the data-set and the ECG signals were classified. Classification is based on four frequency bands

- **Self- Balancing Bot.**

(Jan 2018 – Feb 2018)

Advisor – Dr. Bhooshan Rajpathak, Assistant Professor, VNIT Nagpur.

In this project a self-balancing robot which was made based on the concept of inverted pendulum. Arduino was used as a PID controller and sensor module MPU6050 was used to balance the bot. The chassis of bot was made from waste materials.

TECHNICAL SKILL SET

- **Programming Languages:** C, C#, C++, Python, Java, R, MATLAB, shell scripting.
- **Database Management:** MySQL, JDBC.
- **Hardware Description Languages:** VHDL, Verilog.
- **Design Tools:** SPICE, Xilinx ISE, Multisim, Simulink.
- **Hardware Platforms:** Raspberry Pi, Arduino.
- **Platforms:** Linux, Windows.

POSITION OF RESPONSIBILITY

- **Secretary General at Student Activity Centre (SAC), IIIT Nagpur.** (2018 - 2019)
- **Academic Council Secretary, IIIT Nagpur** (2017 - 2018)

ACHIEVEMENTS AND HONOURS

- Bagged **3rd position** in the district in HSC in May, 2015.
- Bagged **1st position** in the district in SSC in May, 2013.

EXTRA CURRICULAR ACTIVITIES

- Singing, writing poems and stories, acting, dramatics and making documentaries.
- **Event Management Head** for three years in the cultural and technical fest of the institution.
- I have qualities like leadership, team management, critical thinking and public speaking.

PERSONAL DETAILS:

Date of Birth: 19-09-1997

Address: Behind B.S.A Office, Siyaram Mohalla, Ramanpur, Hathras - 204101

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I hereby acknowledge that the information furnished above is correct to the best of my knowledge.

Aman Soni

Date: 29-07-2019