

SAGNIK BASU

PERSONAL DATA

DATE OF BIRTH: 20 March 1995
ADDRESS: D-191,Nalco Nagar,Bhubhaneswar,Odisha
PHONE: +91-9606570921, +91-9437026477
SKYPE MAIL ID: sagnikbasu95@gmail.com
EMAIL: sagnikbasu95@gmail.com
GITHUB NAME: [sagniknitr](#)

CAREER OBJECTIVE

I aspire for an career in Electronics Engineering and Software Development which provides sustainable career growth as well as ample scope for self improvement.

EDUCATION

2013-2017 B.Tech. (8th semester), ELECTRONICS AND COMMUNICATION ENGINEERING, ,
National Institute of Technology Rourkela
CGPA: 8.00/10

2013 CBSE (Class 12) in SCIENCE
DAV Public School, Chandrasekharpur, Bhubaneswar
PERCENTAGE: 93.4

2011 ICSE (Class 10)
Assembly of God Church School, Tollygunj, Kolkata
PERCENTAGE: 91.6

WORK EXPERIENCE

September 2017 | Software Developer at [Visteon Technical and Services Center](#)
Area :- ADAS Middleware and Cybersecurity projects
Worked on development of Drivecore Middleware for Autonomous Driving, deployed automotive grade linux on embedded boards.

May-July 2016 | [Summer Intern](#) at SPACE APPLICATIONS CENTRE,ISRO,AHMEDABAD,
Area :- On-board Digital Signal Processing Systems
RTL design of channel estimation algorithm for DVB-RCS satellite protocol.Testing was done in Xilinx Virtex 5, USRP B210 and Zynq based FPGA development kits

May-June 2015 | [Intern Student](#) at IIT ROORKEE,
Area :- Image processing and Machine Learning
Study of fundamentals of image processing and Machine Learning.Implemented an algorithm on fuzzy classification of Breast Cancer Data-set, in Matlab

PROJECTS DURING B.TECH/B.E.

September 2017-April 2017	<p>Intelligent Wear-ables Based on IoT and Cognitive Radio Technology <i>Department of Electronics and Communication, NIT Rourkela</i></p> <p>Worked on ARM8(Raspberry Pi 3) and ARM11 (MediaTek Linkit One) processors and RTL-SDR, NI USRP B210(Software Defined Radio) for real time applications. Cognitive Radio was implemented using Neural Network programming in python/Tensorflow. The project is funded by IEDC NSTEDB, India. It was also chosen by our department to participate in our Institute's Gold Medal Award for best B.Tech Project</p>
January 2015-April 2017	<p>Vision based Path Planning of a AUTONOMOUS UNDERWATER VEHICLE <i>Department of Mechanical Engineering, NIT Rourkela</i></p> <p>Designed the path planning module of the AUV using stereoscopic camera and Inertial Navigation sensors. All coding done on C++, ROS and Qt platform and were optimised for GPU using CUDA-C. I also designed the circuit for the first prototype of the Vehicle. Our vehicle participated in the NIOT SaVe competition 2017.</p>
May 2015-April 2016	<p>Development of Embedded System for a BALLOON SATELLITE <i>Department of Electronics and Communication, NIT Rourkela</i></p> <p>I was in charge of developing the embedded Sensor and Communication Subsystem of the Balloon Satellite. I worked on a 900 Mhz ZigBee trans-receiver known as Xtend and ARM based microprocessors on UDOO Single Board Computers. Also, a Python script was written to monitor the communication like image transfer, sensor data transfer etc</p>

EXTRA-CURRICULAR ACTIVITIES

CYBORG	<p>Image Processing Sub-Head (2015-2016) <i>Member (2013-2015)</i></p> <p>Cyborg is the official robotics club of NIT Rourkela. As a member, I worked on various embedded and robotics hardware/software such as Raspberry Pi, Ordroid, Microsoft Kinect, ROS etc. I also participated and won in robotics competitions of national repute. My Duty as the Image Processing Sub-Head was to teach and propagate the principles of image processing to all inductees of the club. During September 2016, Cyborg organized the first Workshop on OpenCV in NIT Rourkela INNOVISION.</p>
ROBOTIX, IIT KHARAGPUR	<p>Robotix Student Executive (2014-2015)</p> <p>Robotix Society is the one largest technical society of India. Part of IIT Kharagpur, it organizes year-round activities and competitions related to embedded systems and robotics. As the student executive in NIT Rourkela, objective was to conduct workshops on behalf of the club and promote its events in various technical institutions of the city</p>
AUV-NITR	<p>Image Processing Head (2014-2016)</p> <p>I have been an active member of the team since its inception. The sole purpose of the team is to innovate in the area of underwater robotics and participate in Student Autonomous Vehicle Contest conducted by NIOT, Government of India. Our primary target is to enter the RoboSub competition held every year in San Diego, California.</p>

ACHIEVEMENTS

Secured All India Rank of 6946 out of 150000 students, in [JEE ADVANCED](#) (IITJEE) 2013
Awarded Scholarship by NALCO, for excellent performance in CBSE Plus-II
Secured First position in [Pixelate](#) - the image Processing event in IIT Bombay Techfest 2015
Participated in SAVE 2016 -17 organised by NIOT and secured third position
Runners Up in IIT Kharagpur 2016 Robotics Event 'Sherlock'
Selected as Robotix Student Executive of NIT Rourkela on behalf of Robotix, IIT Kharagpur
Presented a [Smart Helmet](#) prototype which was selected and is now funded by IEDC

Quarter Finalists in Texas Instrument's India Innovation Challenge 2017
Conference Paper on Computer Vision selected at IEEE ICSIPA 2017, Malaysia

TECHNICAL SKILLS

Programming Languages: C/C++, Python, JavaScript, Verilog, Tcl
Simulation Softwares: Multisim, Matlab, GNU Octave, NI LabView, GNU Radio
Operating Systems: Windows, Linux (Ubuntu, Debian, Raspbian-OS, Automotive linux), Yocto,
Embedded System Software: Arduino, Keil, AVR Studio, Xilinx Vivado/ISE, TI Code Composer Studio
Other : ROS, OpenCV, Scikit-learn, TensorFlow, FreeRTOS, Qt, CUDA

COURSES COMPLETED

- **THEORY** :- Basic Electronics , Signals and Systems, Analog Electronics, Semiconductor Devices, Digital Electronics, Computer Vision, Advanced Programming Skills, Microprocessors and Micro controllers, Digital Signal Processing, Embedded System Design, Analog and Digital Communications, Control Systems, Digital VLSI Design, Electromagnetic Theory, Embedded Computing System, Mobile Communications, Soft Computing, Computer Networks
- **Practical** :- Analog Electronics lab, Circuit Simulation Lab, Electrical Machines Lab, Thermodynamics Lab, Analog Communication Lab, Digital Signal Processing Lab, Microprocessor (Intel 8085/8086) Lab, Digital Communications Lab, VLSI Design Lab, Mobile Communication Lab, Soft Computing Lab, Re-configurable IC Lab, Digital Radio Design Lab

REFERENCES

- **Prof. Shirshail Hiremath** : Assistant Professor Electronics and Communication Department NIT Rourkela
hiremaths@nitrkl.ac.in.
- **Dr. Samit Ari** : Assistant Professor, Electronics and Communication Department, NIT Rourkela,
samit@nitrkl.ac.in.
- **Dr. Debashish Ghosh** : Associate Professor, Electronics and Communication Department, IIT Roorkee,
ghoshfec@iitr.ac.in.
- **Dr. Hara Prasad Roy** : Associate Professor, Mechanical Engineering Department, NIT Rourkela
hroy@nitrkl.ac.in
- **Dr. Deepak Mishra** : Scientist SF-Space Applications Centre, ISRO, Ahmedabad
deepakmishra@sac.isro.gov.in.