

# ROHAN CHAUDHURY

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## EDUCATION

<b>National Institute of Technology (NIT) Durgapur, India</b> Graduate (Bachelor of Technology) Department of Electronics and Communication Engineering	August 2015-May 2019 Overall GPA: 9.25/10
<b>St. Xavier's Institution, West Bengal, India</b> Higher Secondary/+2 (Indian School Certificate)	2012-2014 Percentage Obtained: 95.5% (Best 4)
<b>St. Xavier's Institution, West Bengal, India</b> Secondary (Indian Certificate of Secondary Education)	2010-2012 Percentage Obtained: 96.6% (Best 5)

## WORK EXPERIENCE

**Wipro Limited, Chennai, India**  
*Project Engineer* *July 2019- Present*

- Joined Wipro Ltd. as a Project Engineer.

**Research Intern- Machine Dynamics Laboratory, NIT Durgapur, India**  
*Guided by Dr. Nirmal Baran Hui (ME), NIT Durgapur & Dr. Aniruddha Chandra (ECE), NIT Durgapur* *July - September 2018*

- Worked on Robot Path Planning in Dynamic Environments with Moving Obstacles and Targets using Reinforcement Learning.
- Developed a prototype for Robot Path Planning in Dynamic Environments with Moving Obstacles and Target using Ultrasonic and Infrared Sensors.

**Internship at PricewaterhouseCoopers Pvt. Ltd.**  
*Technology Consultant Intern, Year-2018* *May-July 2018*

- Designed an artificially Intelligent ChatBot (Personal Assistant) which was connected to SAP HANA Database. It could send and receive data from the HANA Database and display them to the user in real-time. It was deployed in Facebook Messenger Application. Link: [Certificate Link](#)
- Worked in SAP Analytics Cloud to achieve real-time data analysis and obtain valuable insights from the data using Machine Learning.

**Research Intern- Indian Statistical Institute, Kolkata, India**  
*Guided by Prof. Bhabatosh Chanda (ECSU), ISI Kolkata* *August-September 2017*

- Worked on Restoration of Palm Leaf Manuscript Images using Morphological Transformation Techniques in Image Processing.

**Research Intern- Jadavpur University, West Bengal, India**  
*Guided by Prof. Amit Konar (ETCE), Jadavpur University* *May-August 2017*

- Developed a program (in Python language) for simulation of Robot Path Planning using Particle Swarm Optimization.

## PUBLICATION

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Mahato S, Chaudhury R, Kar R, Mandal D, Saha S, Optimal Integer Order Approximation of Fractional Order Human Ear Simulator, IEEE Electrical Engineering/Electronics, Computer, Telecommunications and Information Technology, ECTI-CON- 2018, Chiang Rai, Thailand. Indexed in SCOPUS and IEEE Xplore Digital Library. Link: [IEEE Xplore Link](#), [Certificate Link](#)

## RESEARCH AND PROJECTS

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### **Optimal Integer Order Approximation of Fractional Order Human Ear Simulator**

*Guided by Dr. Rajib Kar (ECE), NIT Durgapur (Final Year Project)*

*Funded by NIT Durgapur, India*

*Jan-June 2018*

Optimal Integer Order Approximation of a Fractional Order Filter using Flower Pollination Algorithm. The obtained results were better than those obtained by using Continued Fraction Expansion. The work had eventually resulted in a paper which was accepted in 15th International Conference on Electrical Engineering/Electronics, Computer, Telecommunications and Information Technology, ECTI-CON- 2018, Chiang Rai, Thailand, and will be published in IEEE Xplore Digital Library.

### **Prototype Digital stethoscope to analyze cardiac signals in real time during auscultation to reduce the risks of not detecting certain anomalies.**

*Funded by NIT Durgapur, India*

*Smart India Hackathon 2018, India*

*Feb-May 2018*

Designed and Implemented a digital stethoscope which can be used as a platform for computer-aided diagnosis for the detection of cardiac anomalies. A custom-built sensor was used to capture heart sounds and convert them to electrical signals to be processed by an ATmega644 microcontroller. The prototype was selected for the Grand Finale of Smart India Hackathon, 2018 in the 'Hardware Edition: Medical Devices / Healthcare/ Bio Sensing Technologies' section. [Certificate Link](#)

### **A prototype for Robot Path Planning in Dynamic Environments with Moving Obstacles and Target**

*Guided by Dr. Nirmal Baran Hui (ME), NIT Durgapur &*

*Dr. Aniruddha Chandra (ECE), NIT Durgapur*

*Funded by NIT Durgapur, India*

*October-December 2017*

Developed a prototype for Robot Path Planning in Dynamic Environments with Moving Obstacles and Target using Ultrasonic and Infrared Sensors.

### **Obstacle Avoiding Bots Simulation Using Python**

*Guided by Prof. Amit Konar(ETCE), Jadavpur University*

*May-August 2017*

Simulation of Obstacle Avoiding Robots using Python. Relevant codes are available at my Github link: [Github Link](#)

### **Precise Disc Launching Semi-Autonomous Robot**

*Funded by NIT Durgapur, India*

*ABU ROBOCON 2017, India*

*Jan-July 2017*

Designed and developed a semi-autonomous robot using Arduino Uno Microcontroller which was capable of throwing and landing discs at precise locations. Participated in the Asian Oceanian College robot competition, ABU ROBOCON 2017 as a team representing our college with this robot. The goal of the competition was to throw and place a greater number of discs at previously marked platforms than the opponent robot.

### **Home Automation System based on IOT**

*Completed under Pracsol Technologies*

*May-July 2016*

Developed a prototype on Home Automation using Arduino Microcontroller and Wi-Fi module ESP8266 in which the basic electrical appliances of a house can be remotely controlled by an interface in a laptop over the internet.

## SELF-PROJECTS UNDERTAKEN

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### **Made an AI face editor app**

*August 2019*

The app uses flow based generative model to augment human facial features in pictures. [Playstore Link](#)

### **Made an AI Chatbot app**

*August 2019*

The app responds to user's texts like a real person. [Playstore Link](#)

### **Fabricated Reinforcement Learning video tutorial series.**

*Jun 2019*

The tutorial demonstrates the steps to make an Artificially Intelligent Bot using Reinforcement Learning which can play games. Link: [Youtube Link](#)

### **Sentiment Analysis using Tensorflow**

*Feb-March 2018*

Tensorflow was used to analyze positive or negative sentiments in reviews. Relevant codes are available at my Github link: [Github Link](#)

### **RFID Smart Card using Raspberry Pi**

*Jan-February 2018*

RFID card programming using Raspberry Pi 3 and using that to write and fetch data to and from a server. Relevant codes are available at my Github link: [Github Link](#). Detailed video explanation of my project is available at: [YouTube Link](#)

### **MNIST dataset analysis using tensorflow**

*Nov-December 2017*

Analysis of MNIST dataset using Tensorflow with 96% accuracy. Relevant codes are available at my Github link: [Github Link](#)

### **Bluetooth controlled Quadcopter using MultiWii v2.5 SE**

*August-October 2017*

Designed a short-range Quadcopter using MultiWii v2.5 SE which was controlled from an Android device via Bluetooth. It was achieved by using an HC-05 Bluetooth module connected to an Arduino Uno microcontroller. The aim of this project was to find a cheap/readily available alternative for the traditionally used remote to control the Quadcopter.

### **Shape Detection using OpenCV**

*Jul-August 2017*

Shape Detection using OpenCV library in python. Relevant codes are available at my Github link: [Github Link](#)

### **Autonomous Line Follower Robot using Arduino Uno**

*Oct-September 2015*

Constructed an autonomous line follower bot using Arduino Uno and IR sensors.

### **Mobile Robot controlled by a smartphone application via Bluetooth using Arduino Nano**

*Nov-December 2015*

Developed a mobile Robot which is controlled by a smartphone application via Bluetooth using a Bluetooth module HC-05 connected to Arduino Nano. Relevant codes are available at my Github link: [Github Link](#)

## TRAINING DETAILS

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- **Applied AI with Deep Learning** an online course authorized by **IBM** and offered through **Coursera** (Year-2018) [Certificate Link](#), [Badge Link](#)
- **Google Cloud Platform Big Data and Machine Learning Fundamentals** an online course authorized by **Google Cloud** and offered through **Coursera** (Year-2018). [Certificate Link](#)
- **Neural Networks and Deep Learning** an online course authorized by **deeplearning.ai** and offered through **Coursera** (Year-2018). [Certificate Link](#)
- **Machine Learning** an online course authorized by **Stanford University** and offered through **Coursera** (Year-2018). [Certificate Link](#)
- Summer training on **Embedded Systems and Microcontrollers** (Year-2016) from **Pracsol Technologies** [Certificate Link](#)

## TECHNICAL SKILLS

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<b>Programming Languages</b>	C, C++, Python, Java, Javascript, HTML, CSS, XML
<b>Hardware Description Languages</b>	VERILOG
<b>Cloud Based Platforms</b>	SAP HANA Cockpit, Google Cloud Platform, IBM Watson & IBM Data Science Experience
<b>On-Premise Softwares</b>	MATLAB, ECLIPSE, $\LaTeX$ , Android Studio, Sketch-Up, LTspice, Arduino IDE, GNU Octave, Circuit maker
<b>Operating Systems</b>	Windows, Linux(Ubuntu)
<b>Hardware Used for Robotics</b>	Raspberry Pi 3, Arduino

## RELEVANT COURSES

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<b>CS</b>	Machine Learning, Deep Learning, Reinforcement Learning, Artificial Intelligence, Big Data & Analytics, Object Oriented Programming, Data Structures and Algorithms
<b>Mathematics</b>	Graph Theory, Fourier Analysis, Time series analysis, Calculus and Linear Algebra
<b>Electrical</b>	Digital Signal Processing, Instrumentation, Electromagnetic Theory Network Analysis and Synthesis, Transmission Lines Measurement and Instrumentation, Control Systems
<b>Electronics</b>	Analog & Digital Electronics, Analog & Digital Communication, VLSI, Microprocessors & Microcontrollers, Power Electronics Computer Architecture & Organization, Signals and Systems
<b>Other Courses</b>	Probability and Statistics, Economics and Accounting, Quantum Physics, Engineering Mechanics, Physics of Semiconductor Devices

## NATIONAL ACHIEVEMENTS

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- **Scholarship for Higher Education:** Received scholarship from St. Xavier's Institution, Kolkata for scoring more than 90% in ICSE and ISC Examinations.
- **Smart India Hackathon 2018:** Our team representing NIT Durgapur qualified for the Grand Finale of Smart India Hackathon 2018.
- **ABU ROBOCON 2017:** I was selected in the team that represented NIT Durgapur in the Asian Oceanian College robot competition, ABU ROBOCON 2017 as a member of the programming and code development team.
- Secured an All India Rank of 13 in ISC exam (Class XII) conducted by CISCE Board.
- Secured an All India Rank of 11 in ICSE exam (Class X) conducted by CISCE Board.
- Placed in the Top 10% of National Standard Examination in Physics (2013-2014).

## POSITIONS OF RESPONSIBILITY

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- Member of **ROBO-CELL of Centre for Cognitive Activities** (the official Robotics club of NIT Durgapur) from 2015 to 2019. We taught our juniors about Machine Learning and Robotics, and also organized and conducted hands-on Robotics workshops.
- Senior Fest Coordinator in **AAROHAN 2017, 2018 & 2019**(Annual Techno-Management Fest of NIT Durgapur).
- Was involved in raising funds for the **Child Care Project of CCWH and RI** and to help suffering children from cancer.

## EXTRACURRICULAR ACTIVITIES

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- **Teaching** - As a member of **ROBO-CELL** (the official Robotics club of NIT Durgapur), I led several sessions and lectures for juniors on Machine Learning and Robotics.
- **Painting** - Completed **8 years of professional training** under **CHARUKALA RATLANKAR**. Qualified the Examinations of the course in First Division with Distinctions in both Theory and Practical.
- **Guitar** - Completed **3 years of professional training** in Guitar lessons.
- **Synthesizer** - Completed **4 years of professional training** in Synthesizer lessons.
- **Sports** - Outdoor(Cricket, Soccer), Indoor(Chess)