

# MOINAK BHATTACHARYA

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## RESEARCH INTERESTS

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Statistical Machine Learning, Deep Learning, Optimization and Graph Representation Learning

## EDUCATION

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### SRM Institute of Science and Technology

June 2016-Present

B.Tech in Computer Science Engineering

CS: 95%, Mathematics: 98%

Advisor: Dr.R.Annie Uthra, co-advised by Dr. J. Preetha Roselyn

### Vikas Vidyaniketan, Vishakhapatnam

May 2014-June 2016

Senior Secondary

Specialization: Mathematics, Physics, Chemistry and Information Practices

Percentage: 95%

### Ramakrishna Mission Vidyapith, Purulia

May 2008-May 2014

Secondary

Percentage: 87%

## RESEARCH EXPERIENCE

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### Student Researcher, OOS Lab

May 2019-Present

*Statistical Machine Learning and Neural Networks*

NIOT, Chennai

### Student Researcher, Research Lab

June 2018 - Present

*Machine Learning and Deep Learning*

SRM IST, Chennai

### Research Intern, Networks Lab

June 2018 - July 2018

*Machine Learning and Security Researcher*

BIT, Mesra

### Student Researcher, Next Tech Lab

January 2018 - Present

*AI and Healthcare Researcher*

SRM IST, Chennai

## FUNDED PROJECTS

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### Intrusion Detection System in Perimeter Areas under Surveillance using Deep Learning based Computer Vision

February 2019 - Present

*Research Intern*

*Guide:Dr.Preetha J. Roselyn, Dr.R.Annie Uthra*

*Funding Agency: Defense Research Development Organization, Govt. of India*

*Status: Applied*

### Smart Fishing Vessel Management System with efficient battery management and smart communication

March 2019 - Present

*Research Intern*

*Guide:Dr.Preetha J. Roselyn, Dr.R.Annie Uthra*

*Funding Agency: Dept. of Science Technology, Govt. of India*

*Status: Applied*

**Smart Vehicle Monitoring System with  
Battery Life Management, secured Cloud Storage  
and Communication**

March 2019 - Present

*Research Intern*

*Guide: Dr. Preetha J. Roselyn, Dr. R. Annie Uthra*

*Funding Agency: Dept. of Science Technology, Govt. of India*

*Status: Applied*

**Occupancy Detection and Localization of Real-Time data through Deep-CNN in Lab  
Automation**

July 2018 - March 2019

*Research Intern*

*Guide: Dr. Preetha J. Roselyn, Dr. R. Annie Uthra*

*Funding Agency: National Instruments and Research Lab, SRM IST*

*Status: Submitted*

## RESEARCH PROJECTS

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**Prediction and Analysis of Election Results based on non-  
parametric data using Deep Learning and Data Visualization**

*January 2019 - Present*

*Guide: Dr. R. Annie Uthra, Associate Professor*

**Development of digitalized framework for disease Prediction  
and severity classification for neo-natals and children in India**

*March 2019 - Present*

*Guide: Dr. R. Annie Uthra, collaborated with Sukanya, Research Scholar*

**Securing Data using Differential Privacy through re-encryption  
with application of Laplacian Noise**

*February 2019 - April 2019*

*Guide: D. Vanusha, Assistant Professor*

**Identification of Diabetic Retinopathy through analysis of  
fundus image using CapsNet Architecture**

*September 2018 - Present*

*Guide: D. Vanusha, Assistant Professor*

**Experimental Analysis of various RDC Protocols  
with 3 CCA Layers**

*January 2017 - April 2017*

*Guide: Guide: D. Vanusha, co-advised by D. Vathana*

## PUBLICATIONS

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**Moinak Bhattacharya**, Rounak Datta, Dr. R. Annie Uthra, *Comparative Analysis of Bayesian Methods for Estimation of Locally-Invariant Extremes*, Proceedings of IEEE International Conference on Electrical, Control And Instrumentation Engineering, 2019, SCOPUS-INDEXED [ACCEPTED].

**Moinak Bhattacharya**, Rounak Datta, Dr. R. Annie Uthra, Arindam Chakraborty, *IoT Visibility Issues and Securing using Deep Neural Networks*, Proceedings of 4th IEEE International Conference on Communication and Electronics Systems, 2019, SCOPUS-INDEXED.

Raktima Sengupta, Sampurna Roy, **Moinak Bhattacharya**, *Study of Gene-Environment causes of Major Depressive Disorder to statistically define the most common cause behind it*, International Journal of Advanced Research, 2019, SJIF: 7.04

**Moinak Bhattacharya**, Dr. Vandana Bhattacharya, *Detection of Botnets using Invariant Representation*, International Journal of Advanced Research, 2019, SJIF: 7.04

**Moinak Bhattacharya**, *Influence of DNA, Human Area Networking and Artificial Neural Networks in Digitalization of the Computational Sector*, Proceedings of International Conference on Recent Advances in Material Chemistry, 2017

## CONFERENCES AND WORKSHOPS

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IEEE Student Congress, IEEE Madras Section	<i>20 - 21 September 2019</i>
NI ELVIS 3 with IoT Module Training Program	<i>September 2019</i>
Industry Institute Summit 2018, IET Chennai Local Network	<i>September 2018</i>
Workshop on Human Cognition and Emotion Adopting AI Technologies	<i>September 2018</i>
Workshop on Natural Language Processing and Machine Learning using Python	<i>September 2018</i>
Certificate course on Internet of Thing Applications	<i>August-September, 2018</i>
International Conference on Big Data, Cyber Security and Information Technology	<i>July, 2018</i>
Workshop on Bigdata [WebTek Labs]	<i>5 October, 2017</i>
International Conference on Recent Advances in Material Chemistry	<i>February, 2017</i>

## UNDERGRADUATE COURSES

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**Computer Science(Elective):** Machine Learning(15CS324E), Data Science and Big Data Analytics(15IT423E), Nature Inspired Computing Techniques(15CS427E), Database Security and Privacy (15CS338E), Software Quality Assurance(15SE422E), Cryptography(15IT327E) and Pattern Recognition Techniques(15CS426E).

**Computer Science(Core):** Programming in C(15IT102), Object Oriented Programming using C++ (15SE201J), Digital System Design(15CS202), Microprocessors and Microcontrollers(15CS205J), Computer System Architecture(15CS203), Data Structures(15CS201J), Analysis and Design of Algorithms (15CS204J), Computer Networks(15IT303J), Theory of Computation(15CS301), Compiler Design (15CS314J), Operating Systems(15CS302J), Database Management Systems(15IT302J), Software Engineering Principles(15SE202), Web Programming(15IT304J), Artificial Intelligence(15CS401) and Professional Ethics And Software Economics(15SE204).

**Mathematics:** Calculus and Solid Geometry(15MA101), Advanced Calculus and Complex Analysis(15MA102), Probability and Queuing Theory(15MA207), Transforms and Boundary Value Problems(15MA201).

## CERTIFICATIONS

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**Coursera:** [Deep Learning Specialization](#), [Machine Learning](#), [Genomic Technologies](#), [Python Programming](#).

**NPTEL:** Scalable Data Science, Cloud Computing and Distributed Systems, Introduction to R Programming.

## PROFESSIONAL BODY MEMBERSHIP

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Student Member IEEE(Member Number:95191460)**R&D Member**,IEEE Student Chapter, SRM IST.  
Student Member ACM (Member Number: 3800444)  
Student Member MTS (Member Number: 25627) **Office Bearer**, MTS Student Chapter, Chennai.  
Student Member IET (Member Number: 1100545108)  
null The Open Security Community

## TECHNICAL SKILLS

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<b>Programming Languages</b>	C/C++, JAVA, Python, R, MATLAB
<b>Machine Learning</b>	TensorFlow, PyTorch, Keras, Caffe, scikit-learn, Horovod, Cuda, Nvidia
<b>Security Tools</b>	Metasploit, WireShark, SolarWinds: DPIA tool, Network Visibility tools
<b>Others</b>	NI ELVIS 2, NI ELVIS 3

## ACHIEVEMENTS

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IEEE 2nd Best Student Project Award with a cash prize of INR 1000 at IEEE Student Congress 2019  
 MTS Best Student Chapter Award in the World 2019  
 Several Research Fundings and Research Recognitions: 2018-2019  
 Techknow Best Student Project Award: 2016  
 Student of the year: 2014-2016  
 Best Leader Award, Law and Order: 2012, 2013, 2014.

## EXTRAURRICULAR ACTIVITIES

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Psephology, Ancient Indian Literature, Classical Music, Teaching, Social Service.