Rohit Agarwal

H.No. - 296, Chinchula T.E.A, Kalchini, Alipurduar, West Bengal, India - 735217
(+91) 8290957238 | agarwal.102497@gmail.com | agarwal.102497 | Rohit102497 | Rohit102497 | rag1024 |

Research Interests: Deep Learning, Machine Learning, Time Series Analysis, Scalable Architectures, Online Learning, Computer Vision, Natural Language Processing, Statistics, Sampling Theory

Education

GPA: 9.49/10 — Indian Institute of Technology (ISM) Dhanbad, India
2015-2020 — 5-year Integrated M.Tech in Mathematics And Computing
GOLD MEDALIST — Passed with distinction
PROVISIONAL DEGREE — Indian Institute of Technology (ISM) Dhanbad, India
Master Thesis:
Title: *Deep Learning for Streaming Classification* | Grade: A+
Supervisor: Prof. Garib Nath Singh & Dr. Dilip K. Prasad
Keywords: Deep learning, Statistics, Neural networks, Data Science

GRADE: A — UiT The Arctic University of Norway
FEB-JUNE '20 — INF-3995 Special Curriculum in Computer Science
CREDITS: 20 ECTS — *Scalable Artificial Intelligence Architecture*
Supervisor: Dr. Dilip K. Prasad

GRADE: A — UiT The Arctic University of Norway
FEB-JUNE '20 — Special Curriculum FYS-3820 Report, August 2020
CREDITS: 20 ECTS — *Microscopy and Artificial Intelligence*
Supervisor: Dr. Krishna Agarwal

%: 89/100 — Bharat Senior Secondary School Kota, India
2015 — Board of Secondary Education, Rajasthan
Senior Secondary Examination
Subjects: Maths, Physics, Chemistry, English, Hindi

GPA: 10/10 — Air Force School Hasimara, India
2013 — Central Board of Secondary Education
Higher Secondary Examination
Subjects: Maths, Science, Social Sciene, IT, English, Hindi

Publications

R. Agarwal, *A. A. Sekh, K. Agarwal, D. K. Prasad, "Auxiliary Network: Scalable and agile online learning for dynamic system with inconsistently available inputs"*
arXiv:2008.11828 : Under review

A. A. Sekh, I.-S. Opstad, **R. Agarwal**, *A. B. Birgisdottir, T. Myrmel, B. S. Ahluwalia, K. Agarwal, D. K. Prasad, "Simulation-supervised deep learning for analysing organelles states and behaviour in living cells"*
arxiv:2008.12617 : Nature Machine Intelligence, 2020, Under review

A. K. Jena, A. Sinha, **R. Agarwal**, *"C-Net: Contextual Network for Sarcasm Detection"*
10.18653/v1/2020.figlang-1.8: Accepted at Second Workshop on Figurative Language Processing 2020, for Sarcasm Shared Task, workshop under **ACL 2020**

S. Dhanalaxmi, **R. Agarwal**, *A. Sinha, "Detection of COVID-19 informative tweets using RoBERTa"*
arxiv:2010.11238: Accepted at Sixth Workshop on Noisy User-generated Text 2020, for COVID-19 shared Task, workshop under **EMNLP 2020**

Academic Courses

Statistics	Probability and Statistics, Statistical Inference, Sampling Theory
Mathematics	Discrete Mathematics, Project Management, Operation Research, Topology, Graph Theory, Linear Algebra, Modern Algebra, Theory of Computation, Numerical Methods, Real Analysis, Complex Analysis, Ordinary and Partial Differential Equation, Number Theory
Computer Science	Object Oriented Programming, Data Structures, Computer Graphics, Design and Analysis of Algorithm, Data Base Management Systems, GPU Computing with CUDA, Operating System, Computer Networks, Computer Organization, Software Engineering, Information and Coding Theory, Software Computing

MOOC courses

Work hours: 391 — University courses

2017-present

- Machine Learning - Standford University | 98% | *60 hrs*
- Introduction to Mathematical Thinking - Stanford University | 94% | *39 hrs*
- Reproducible Research - Johns Hopkins University | 97% | *8 hrs*
- Statistical Inference - Johns Hopkins University | 100% | *54 hrs*
- Exploratory Data Analysis - Johns Hopkins University | 97% | *55 hrs*
- Getting and Cleaning Data - Johns Hopkins University | 97% | *20 hrs*
- Regression Models - Johns Hopkins University | 100% | *54 hrs*
- The Data Scientist's Toolbox - Johns Hopkins University | 95% | *18 hrs*
- R Programming - Johns Hopkins University | 99% | *57 hrs*
- Practical Time Series Analysis - State University of New York | 98% | *26 hrs*

Work hours: 43 — Coursera courses

2019-present

- Neural Networks and Deep Learning - DeepLearning.AI | 95% | *20 hrs*
- Improving Deep Neural Networks - DeepLearning.AI | 98% | *18 hrs*
- Structuring Machine Learning Projects - DeepLearning.AI | 87% | *5 hrs*

Work hours: 20 — DataCamp courses

2017

- Introduction to R - *4 hrs*
- Intermediate R - *6 hrs*
- Intermediate R: Practice - *4 hrs*
- Introduction to Importing Data in R - *3 hrs*
- Intermediate Importing Data in R - *3 hrs*

Work hours: 7 — LinkedIn courses

2020

- Learning Puppet - *2 hrs*
- DevOps Foundations: Infrastructure as Code - *2 hrs*
- Learning Ansible - *3 hrs*

Computer Skills

Language:	Python, R, C++, C, Java, HTML, LaTeX, JavaScript
Concepts:	Linux, Kubernetes, Docker, AWS, Azure, Infrastructure as Code, CI/CD
Libraries:	Keras, Tensorflow, Sklearn, Pandas
Tools:	Visual Code, Git, Terraform, Puppet, Chef, Ansible, Jira, MySQL, Jenkins

Work Experience

Aug 2020 - Ongoing
Software Engineer at **Adobe Inc., Bangalore, India** | *Manager:* Lokendra Singh Chauhan
Working on cloud technology based products.
Keywords: Python, GitHub, Kubernetes, AWS, Azure, Puppet, Terraform, Ansible, Chef, CI/CD.

Feb-June 2020
Research Intern at **UiT The Arctic University of Norway** | *Guide: Dr.* Dilip K. Prasad
Developed a scalable deep learning architecture to classify the streaming data with dynamic number of input dimensions.
Certificate
Keywords: Python, Keras, Tensorflow, MLP.

May-July 2019
Intern at **Adobe Inc., Bangalore, India** | *Guide:* Sunil Bannur
Enterprise and individual customers of Adobe uses cloud storage for different purposes. This project predicts the amount of space required by Adobe's customers in future.
Certificate
Keywords: Python, Keras, Tensorflow, StatsModels, ARIMA, MLP, LSTM, Encoder Decoder.

May-July 2018
Summer Research Fellow at **NIBMG Kalyani, India** | *Guide: Dr.* Samsiddhi Bhattacharjee
Characteristics of Single Nucleotide Polymorphisms (SNPs) were analyzed to predict SNPs associated with a trait or disease. report
Certificate
Keywords: R, glm, randomForest, rpart, Logistic and Lasso Regression, CART, Fisher's Exact Test.

PROJECTS

September 2020
Command Line Utility to crawl web
Developed a command line (bash-type) utility tool to report the statistics of website like the number of external links, internal links, broken links, load time, etc. and provide the web-report in user defined format like csv, json, yaml format. It stores the data in a shelve database. GitHub link

Aug 2019 - Jan 2020
An Improved Estimation Procedure for Population Mean in Presence of Non-Response
Guide: Prof. Garib Nath Singh, Indian Institute of Technology, Dhanbad
Hansen and Hurwitz (1946) proposed an estimator by taking a sub-sample from non-respondents. We are developing an improved estimator that considers the auxiliary information in non-response. manuscript

Aug-Dec 2018
Individual Player's Performance Indicators for ODI or T20 International Cricket Matches
Mathsport Asia 2018 | *Guide: Prof.* Gordon Hunter, Kingston University London
Individual player's performance was analyzed by evaluating his contribution both over several games, and to the team's performance in a single match using Principal Component Analysis.

Aug-Dec 2018
Competitive Balance in Football Leagues: Domestic vs International
Mathsport Asia 2018
Developed a cost function to calculate the competitiveness of a football league. It compares the competitiveness among the leagues and also within a league over seasons. GitHub link

Jan-March 2018
Dow Jones Industrial Average Price Prediction
Academic Project at IIT (ISM) Dhanbad, India | *Guide: Prof.* Garib Nath Singh
Stock Prices of Dow Jones Industrial Average were forecast using time series analysis. Autoregressive Integrated Moving Average model was applied. ARIMA(0,2,1) gave a Standard Error 0.42.

October 2017
Health And Economic Problems Due To Severe Weather Events
Implemented a visualization model in R on U.S. National Oceanic and Atmospheric Administration's (NOAA) storm database which addresses events most harmful to the human population health and have greatest economic consequences.

Scholarships

2018	Science Academies' Summer Research Fellowship.
2017 & 2018	Director Scholarship for excellence in academics.
2017, 2018 & 2019	Merit Cum Means (MCM) Scholarship offered by the institute.

Academic Achievements

2015-2020	Ranked 1st in the Applied Mathematics Department, IIT(ISM) Dhanbad
2015	Secured All India Rank 5017 in IIT JEE Advance among 1,50,000+ candidates.
2015	Secured General Merit Rank 51 in WBJEE among 3,00,000+ candidates.
2014	Secured International Rank 23 in Level 1 and International Rank 19 in Level 2 of International Olympiad of Mathematics.

Co-Curricular Activities

Captain	Led IIT (ISM) Volleyball Team at Inter IIT Sports Meet 2017 & 2018.
Mentor	Mentor at Data Science Club (DSC), IIT (ISM) Dhanbad.
Member	Member of Society of Industrial and Applied Mathematics - IIT (ISM), 2015-20 .
Member	Member of Society for Applied Mathematics - IIT (ISM), 2015-20 .
Secretary	Coordinator of IIT (ISM) Volleyball Club for the session 2016-18.
Champion	Won Volleyball tournament at Parakaram (Inter University Sports Fest) 2015-16.
Organizer	Coordinated Inter Hostel General Championship 2017 and 2018.
Volunteer	I look after the student's school affairs at Kartavya (Student Run NGO) 2016-20.
Event Head	Coordinated Annual Sports Meet 2018.
G.Sec., Sports	General Sports Secretary of IIT (ISM) Dhanbad for the session 2018-19.
Coordinator	Coordinated Concetto (University Technical Fest) 2018.
Nominated Member	Dean Students Welfare, IIT (ISM) Dhanbad 2019-20.

Interests and Activities

Sports:	Volleyball, Football, Basketball, Cricket, Badminton, Running, Cycling
Others:	Leadership, Management, Finance, Programming, Rubik's Cube
Languages:	Hindi, English, Nepali, Bengali

References Available on Request

gnsingh_ism@yahoo.com — Garib Nath Singh, Professor, Department of Applied Mathematics
Indian Institute of Technology (Indian School of Mines), Dhanbad

krishna.agarwal@uit.no — Krishna Agarwal, Associate Professor, Department of Physics & Tech.
UiT The Arctic University of Norway

dilip.prasad@uit.no — Dilip K. Prasad, Associate Professor, Department of Computer Science
UiT The Arctic University of Norway

sb1@nibmg.ac.in — Samsiddhi Bhattacharjee, Assistant Professor
National Institute of Biomedical Genomics, Kalyani