Gaurav Mishra

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About Me

Technical Skills	Python, Shell Scripting, MATLAB, C, Java, LaTeX
Frameworks	Keras, Tensorflow, scikit-learn, SciPy, PyTorch(learning)
Research Interests	Artificial Intelligence, Deep Learning
Languages	Conversational and Written Proficiency in Englsh, Hindi and Bhojpuri
Interests	Classical Music, Photography, Cooking
Profiles	github, ResearchGate, LinkedIN

Education and Test Scores

Shiv Nadar University Greater Noida, UP (2015–2019)

- B.Tech. with distinction in Electronics and Communication Engineering, **CGPA: 8.50/10.00**
- 75% Tuition Fee waiver, In top 9% ile of the class

City Montessori School, Gomti Nagar Lucknow, UP (2012–2014)

- Intermediate, 10+2 (Science), **Percentage: 90.0%**

Standardised Tests

- **GRE**- 320 (Quant: 164, Verbal: 156, AWA:4.5, taken in Sep 2018)
- **TOEFL** - 112/120 (taken in Sep 2018)

Projects

Cancer Classification of Pigmented Lesion Images using Residual Neural Networks

- Aim of this project is to achieve state-of-the-art metrics in detecting type of skin cancer using lesion image
- The usability of ResNets will be checked, as it gives better results in image classification
- Working on HAM10000 dataset to detect the type of skin cancer

Machine Learning in Drug Discovery and Computational Biology (Under Prof. Raghava)

- Project Title: In-Silico Drug Discovery using Protein-Small Molecule Interaction
- The aim of this project was to predict binding sites for a ligand in a protein or peptide chain
- Involves feature extraction, feature reduction and then applying Machine Learning techniques to get predictions which will aid a better drug design
- The ligand is Uridine 5'-diphosphate which is responsible for many metabolic functions in the body

Feature Generation for Protein and Peptide Sequences (Guide: Prof. Raghava's Group)

- Aim of the project was to extract features from protein and peptide sequences which can later be used in predictive analyses
- Launched a web server Pfeature, standalone, and executables which take sequences from users and then generate desired features (around 50,000) and help the scientific community

Ensemble Learning for Regression Analyses (Guide: Prof. M Gopal , Monsoon 2018)

- Aim of the project was to employ Ensemble Learning methods to Regression Problems
- Comparison of existing methods (like Linear Regression, SVM, Neural Network) with Ensemble Methods
- Deducing feature importance using Ensemble Methods and comparing it with other methods such as Lasso, CART etc.
- Dataset used: Boston Housing Dataset

RFID based Object Identification and Navigation System (Guide: Prof. RN Biswas, Spring 2018)

- Designed a novel method to help Visually Impaired using RF and RFID
- Use of RF to create a Virtual Acoustic Space which helps the visually impaired to locate the desired object

Annual Household Income Prediction using Machine Learning (Guide: Prof. M Gopal, Spring 2018)

- Used Machine Learning to determine Annual Income of a household using various socio-economic attributes

Please turn over

Academic Work Experience

Under Prof. G.P.S. Raghava, Deptt. of Computational Biology, IIIT, Delhi
Long Term Research Intern — New Delhi (Dec 2018-May 2019)

- Worked in Computational Biology Lab with Prof. Raghava and his PhD scholars
- Independent research work on multiple projects related to ML
- Assisted the researchers on mainly the Machine Learning part of their work, *two papers in communication*

Under Prof. RN Biswas, Embedded Systems Lab, Shiv Nadar University
UG Teaching and Research Assistant for course Embedded Systems — Greater Noida, UP (Aug 2018 - Dec 2018)

- Responsible for creating new experiments for a 3rd year course 'Embedded Systems Hardware'
- Mainly working on protocols such as SPI, I2C, etc. and peripherals such as RFID on ARM based STM32
- Assisting Prof. R.N. Biswas in lab

Office of Dean of Undergraduate Studies, Shiv Nadar University
UG Teaching Assistant under Prof. Amber Habib — Greater Noida (July 2018)

- Responsible for tutoring newly admitted students the coursework which helps them bridge the gap between school and university coursework
- Tutor for Physics and Mathematics, taught Set Theory, Calculus and Mechanics

Department of Mathematics, Shiv Nadar University
UG Teaching Assistant for course Mathematical Methods — Greater Noida, UP (Feb 2018 - May 2018)

- Was responsible for tutoring UG freshmen the course MAT104 (Mathematical Methods) and assisted course instructor Dr. Ajit Kumarwith the coursework
- Topics taught: Graduate Calculus, LA, Differential Equations, Numerical Methods for Optimisation

Department of Physics, Shiv Nadar University
UG Teaching Assistant for course Introduction to Physics — Greater Noida, UP (Aug 2016 - Dec 2016)

- Was responsible for tutoring UG freshmen the course PHY101 (Introduction to Physics)
- Topics taught: Kinematics, Thermodynamics, Oscillations

Publications

SAMbinder: A web server for predicting SAM binding residues of a protein from its amino acid sequence*(pdf)*

- Bioinformatics (IF 5.481) (paper in communication)
- Authors: Piyush Agrawal, **Gaurav Mishra**, Gajendra P.S. Raghava

Computing wide range of protein/peptide features from their sequence and structure *(pdf)*

- Plos One (IF 2.766) (paper in communication)
- Authors: Akshara Pande, Sumeet Patiyal, Anjali Lathwal, Chakit Arora, Dilraj Kaur, Anjali Dhall, **Gaurav Mishra**, Harpreet Kaur, Neelam Sharma, Shipra Jain, Salman Sadullah Usmani, Piyush Agrawal, Rajesh Kumar, Vinod Kumar, Gajendra P.S. Raghava

RF and RFID based Object Identification and Navigation System for the Visually Impaired *(pdf)*

- The 32nd International Conference on VLSI Design, 2019 (VLSID)
- Authors: **Gaurav Mishra**, Urvi Ahluwalia, Karan Praharaj, Shreyangi Prasad

Relevant Coursework

University Courses

- Applied Machine Learningˆ, Computational PDE*, Mathematical Methodsˆ, Probability and Statistics*, Dynamical Systemsˆ, Data Structuresˆ, Digital Signal Processing* **(* - A-, ˆ - B)**

Online Courses

- Machine Learning by Stanford University on Coursera, Instructor: Prof. Andrew Ng
- Neural Networks and Deep Learning by deeplearning.ai on Coursera, Certificate Number: LESLBWYD83TD
- Improving Deep Neural Networks: Hyperparameter tuning, Regularization and Optimization by deeplearning.ai on Coursera, Certificate Number: 66FSVSA2JK7S
- Mathematics for Machine Learning Specialisation by Imperial College London on Coursera, Certificate Numbers: 5FTA53CZML87, JGH533XCZR4D

Leadership Opportunities

Food Committee, Dean of Student Welfare Office, Shiv Nadar University
Chairperson (Head) — Greater Noida, UP (May 2018 - May 2019)

- Responsible for heading food related jobs and problems throughout the campus with 2500 people
- Organised first **Food Fest** which raised around 1.8lacs INR (2600 USD) in one day
- Negotiated and helped in opening new food outlets at campus, tendering and framing contracts

Spic Macay SNU Chapter
Secretary (Head) — Greater Noida, UP (Mar 2018 - Mar 2019)

- Responsible for managing a chapter of 100+ members, organising events involving reputed Indian Classical exponents
- Head of Logistics, Finance, Hospitality and Publicity Team

Snuphoria-The Music Society
Head of Indian Music — Greater Noida, UP (Feb 2017 - Jan 2018)

- Head of Indian Wing of the Music Society, responsible for managing representations in Indian Music
- Responsible for organising events with ample representation of Indian Music
- Was mentor for Hindustani Classical Music for 3 consecutive terms

References

Prof. Gajendra P.S. Raghava

- Head, Centre for Computational Biology, IIIT Delhi
- e-mail: raghava@iiitd.ac.in, Tel:+91-11-26907444

Piyush Agrawal

- Ph.D. Scholar (SRF, 5th year), IM-Tech, Chandigarh
- e-mail: piyush_11@imtech.res.in, Ph: +91-75088 33575