Ishita Mediratta

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Education

- **Birla Institute of Technology and Science (BITS), Pilani** — Pilani, India
  B.E. in Computer Science; ***CGPA: 9.44*** *(Department rank: 5)* — *Aug 2017 – May 2021*
- **Apeejay School** — Faridabad, India
  PCM; ***CBSE Boards: 94.8%*** — *Apr 2003 – May 2017*

Research and Work Experience

- **Teaching Assistant** — Goa, India
  BITS Pilani — *Aug 2019 - Present*
  - **Logic in Computer Science (CS F214)**
    Organizing and conducting weekly tutorial sessions, grading quizzes for a class of 250 undergraduate students
  - **Computer Programming (CS F111)**
    Grading labs for a weekly batch of 150 undergraduate students
  - **Introduction to iOS Application Development**
    Taught undergraduate students the fundamentals of iOS application development, familiarizing them with tools and libraries such as Xcode, Firebase, Cocoapods, etc.
- **Undergraduate Study Project, BITS Pilani** — Goa, India
  Study Oriented Project — *Jan 2019 - Present*
  - **Working under Dr. Basabdatta Sen Bhattacharya on the sPiNNaker Platform hosted at the University of Manchester**
    To develop an image classifier using the Lateral Geniculate Nucleus model and see whether it can perform at par with the present-day Deep Learning models, that too with low power consumption requirements using the SpiNNaker neuromorphic system.
  - **Current Work**
    Working directly with the other members of the sPiNNaker development team to implement STDP in Izhikevich neurons, both current and conductance-based and the Anti-Hebbian Learning Rule, in the sPyNNaker software; Currently working on merging it with the already existing model of the Visual Cortex.
- **CSIR-Institute of Genomics and Integrative Biology** — New Delhi, India
  Summer Research Intern — *May 2019 - Jul 2019*
  - **Worked under Dr. Bhavana Prasher (Principal Scientist) and Dr. Mitali Mukerji (Chief Scientist)**
    Aiming towards the achievement of Precision Medicine using Ayurveda's concept of "Prakriti" for stratifying individuals based on their phenotypes
  - **View Project**
    1. Conducted literature review on existing statistical techniques available for integrating heterogenous, multi-dimensional datasets
    2. Aim was to develop algorithms to capture phenotype to phenotype relationship to stratify individuals into sub-populations and capture the inter as well intra-individual distances
    3. Used entropy-based distance metric to perform analysis on ordinal and nominal categories within the dataset
    4. Designed visual representation of individual-level signatures and between-population signatures based on above algorithms using Django and D3js
    5. Published an open-sourced, well-documented Python package on the same for wider public access

Acheivements

- **Merit Scholarhip, BITS Pilani (2017 - Present)**
  For being consistently in the top 1% of the batch since admission; Awarded for semesters I, II, III, IV and V.
- **Facebook F8 Scholarship (2017)**
  A one-time $600 scholarship awarded by Facebook in 2017 to select developers (less than 1%) who may not have the resources to attend the F8 conference otherwise
- **Apple WWDC Scholarship (2016)**
  First girl from India to attend the WWDC as a scholar among 350 international recipients in June 2016. The program lasted for a week, where I worked closely with Apple engineers to understand and integrate latest iOS technologies and best practices into my software.
  Attended an orientation program where I got the opportunity to interact with their CEO, Mr. Tim Cook
- **Junior Astitva Samman (2017)**
  Given by the PHD Chamber of Commerce and Industry to encourage and motivate students that have demonstrated innovations, leading to socio-economic upliftment of the society in general.
- **The Excelsior Tie (2016)**
  Conferred with the highest academic honor of my school for being a consistent scholar

Independent Projects

- **iOS Application Development**
  4 apps published in the iOS App Store with a cumulative 20000+ downloads
- **Bengali.AI Handwritten Grapheme Classification Kaggle Challenge**
  Current public score of 0.9664
- **Using deep learning to find EEG correlates of genetic predisposition to alcoholism**
  Achieved a test f1-score of 0.86 using a 3-layer CNN
- **Blood Cell Subtypes Classification using Deep Learning**
  Achieved a test accuracy of 0.92 on a dataset having 4 different subtypes: Eosinophil, Lymphocyte, Monocyte, and Neutrophil
- **Predicting Influencers using Machine Learning**
  Using the PeerIndex dataset; Made use of Random Forests model to achieve a test f1-score of 0.8200

Programming Skills

- **Languages**: Python, Swift, Javascript, C++, SQL, Java, HTML, CSS, MATLAB, Bash
  Libraries/Tools: PyNN, Tensorflow, Keras, Numpy, Pandas, Django, D3js, sPyNNaker8, Git

Relevant coursework

- **Taken at BITS Pilani**
  Probability & Statistics, Linear Algebra, Data Structures and Algorithms, Object Oriented Programming, DBMS†, Introduction to Cognitive Neuroscience, Computer Architecture†, Decision Procedures†, Machine Learning*, Neural Networks & Fuzzy Logic*, Data Storage Technologies*, Design & Analysis of Algorithms*
- **MOOCs**
  Deep Learning Specialisation by Prof. Andrew Ng, Machine Learning by Prof. Andrew Ng, Computational Neuroscience by University of Washington

*: Ongoing, †: Course Topper