

SOHINI BHATTACHARYA

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EDUCATION

Shiv Nadar University

B.Tech Computer & Science Engineering - CGPA - 9.04

2020-2024

Delhi NCR

Vishwa Bharati Public School

CBSE - Class 12 - 96.8%

2020

Delhi NCR

SKILLS & COURSEWORK

Languages: Python, Java, Kotlin, SQL, L^AT_EX

Coursework: Introduction to Machine Learning, Probability & Statistics, Computer Vision, Design & Analysis of Algorithms, Theory of Computation, Object Oriented Programming, Data Structures & Algorithms, Discrete Mathematics, Mathematical Methods I & II

EXPERIENCE

Software Engineering Intern, Hewlett Packard Enterprise

March 2024-present

Undergraduate Research Assistant, Northeastern University

May 2023-present

- Working under the advisement of Prof. Varun Mishra.
- We establish two broad objectives for which researchers in the community rely on data imputation, namely Reconstruction and Prediction.
- Further, we present metrics to evaluate imputation strategies for both objectives and comprehensively benchmark off-the-shelf imputation strategies along with our novel imputation strategies with the open-source GLOBEM platform and datasets.
- Our results demonstrate that using our imputation strategies led to a 31% increase in AUROC for predicting participants' future depression labels using their past data with the same model building and prediction pipeline as the GLOBEM platform.
- Furthermore, we also present imputation trends and evaluation of imputation strategies by simulating a real-time scenario where we predict depression labels every week as the study continues.

Teaching Assistant, Shiv Nadar University

2023-2024

- CSD350 - Natural Language Processing. Taught by Prof. Harish Karnick. Spring'24
- CSD210 - Introduction to Probability & Statistics. Taught by Prof. Saurabh Shigwan. Spring'23
- CSD213 - Object Oriented Programming. Taught by Prof. Pooja Singh. Monsoon'23.

Research Assistant, Shiv Nadar University

June 2022-June 2023

- Working under Prof. Dolly Sharma, under the scheme of "OUR" - Opportunity for Undergraduate Research.
- Developed a python library "ALbedo", a one-stop destination to utilize active learning sampling methods for image classification.
- Using a multi-class design and OOPs concepts.

Sensing In-Person Interactions & Social Groups using SmartWearables **October 2021-January 2023**

- Co-designed sensor-framework kotlin library "SeventhSense" for human activity recognition, device placement or orientation, and ambient context e.g location, co-location etc. using WiFi and BLE sensors.
- Implemented and deployed a prototype library in Kotlin using Android smartphones and WearOS wearables for testing the proposed system.
- Worked with MicroPython for acquiring sensor data from Micro:bit v2, retrofitted as a wrist-worn programmable wearable.

Project Intern, Accenture Labs

May 2022-August 2022

- Worked on biometric authentication using EEG signals.
- Tested several visual and audio stimuli and implementing the best combinations to improve the accuracy of the authentication techniques.
- Investigated the frequency of sample collection and re-authentication required to sustain a stable and accurate system.
- Extracted time, frequency and spectral domain features and implementing deep learning models to have a foolproof method of identity checks.

PUBLICATIONS

Imputation Strategies for Longitudinal Behavioral Studies

2024

- **Sohini Bhattacharya**, Rahul Majethia, Akshat Choube, Varun Mishra
- UbiComp/ISWC 2024 9th Workshop on Mental Health and Well-being

Missingness in Longitudinal Behavioral Sensing Studies

Under Review in ISWC

- Akshat Choube, **Sohini Bhattacharya**, Rahul Majethia, Varun Mishra

COURSE PROJECTS

CrissCross

March 2023-May 2023

- Developed an android application using Flutter & Firebase. "CrissCross" aims to manage the food ordering and delivery pipeline of our campus.
- User and admin specific views of the application, along with notifications and order completion timestamps, order placement and editing options along with order status updates. Worked mainly on the frontend using Flutter & Figma.

New Sampling Methods for Active Learning implementation

August 2022-December 2023

- Working under Prof. Snehasis Mukherjee, using the MNIST & CIFAR10 Datasets.
- Comparing the pre-existing sampling methods and query strategies like Least Confidence, K-means Sampling, Random Sampling, Entropy Sampling, etc.
- Devising a novel sampling method to garner a better active learning strategy in order to tackle catastrophic forgetting.

SNDR - a peer-to-peer BLE data-sharing application.

December 2022

- Created a mobile application to simplify the data transfer, sharing and storage process using Bluetooth Low Energy technology.
- Aimed to solve two main issues: manually recording local data and the inability to connect to the server due to poor Internet.
- The app was made using Flutter. Key features - roll out forms to gather local data, students can connect & mark attendance, users take pictures through other devices & share files directly between devices.

ACHIEVEMENTS

Dean's List, SNU

Monsoon 2023, Spring 2023, Monsoon 2022, Spring 2022, Monsoon 2020

Top 10% of CSE School Of Engineering

SOF International Mathematics Olympiad

2019 & 2018

International Rank 483 & 415, Zonal Rank 34 & 55, Gold Medal & Gold Medal

SCHOLARLY SERVICES

Global Young Scientists Summit (GYSS) 2023 **2023**

Nominated to represent Shiv Nadar University at the summit in online mode.

ACM-W, SNU **2023**

Treasurer

- Initiated events to expand awareness regarding research opportunities & scholarship applications.
- Designed the outline of the ACM-W newsletter.

ACM CHI 2022 **2022**

Peer Reviewer

VOLUNTEER EXPERIENCE

Dog Welfare HPE **2024**

Food Distribution Team Member

- Volunteering towards on-ground feeding of dogs on HPE campus.

Fetch **2024**

Creative & Design Team Member

- Fetch is a dog welfare club based in SNU.
- Written content for the monthly newsletters and donation pamphlets. Raised awareness regarding vaccination drives and donations.

The Active Dreams (TAD) **2022**

Creative & Design Team Member

- The Active Dreams (TAD) is an NGO that aims to empower women by creating employment opportunities.
- Written articles and blogs based on the salient topics regarding women's empowerment and menstrual hygiene. Created digital posters for the fundraising and promotion events.