Harish Manoharan

Roll Number: BS19B012

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EDUCATION

Degree	Institute/Board	CGPA/Percentage	Year
Inter-disciplinary Dual Degree in Biological Sciences and Data Science	Indian Institute of Technology Madras	8.66	2019-2024
Senior Secondary	National Institute of Open Schooling	92%	2019
Secondary	National Institute of Open Schooling	91.4%	2017

- Awarded **INSPIRE Scholarship** by the Department of Science and Technology, Government of India
- Among Top 25 students selected for the **Young Research Fellowship** based on research excellence
- Selected for **Amazon ML Summer School 2022** through a competitive test and attended lectures from industry experts.
- Among Top 5 teams selected for **ICPC for Schools** to participate in ICPC Regionals 2017(Amritapuri site) alongside college teams

PROFESSIONAL EXPERIENCE

Young Research Fellow   September 2021 – August 2022
IIT Madras   *Dr. Karthik Raman*
- Working on identification of optimal strategies for **manipulating the Home Microbiome**
- Rural and urban home microbiomes were studied. Metabolic interactions between the most abundant microbes were modelled. Core microbiome differentiating rural and urban homes were identified

Research Intern   May 2021 – July 2021
Jawaharlal Nehru University   *Dr. Shandar Ahmad*
- Worked on **Tumor Deconvolution DREAM Challenge** to deconvolute relative cell populations in a tumor microenvironment from its bulk gene expression data
- Developed a deep learning **Multi-Layer Perceptron** model. Obtained a **Pearson correlation of 0.89**
- Other models like random forests and SVM were also explored

PROJECTS

Content Similarity Detection | *Python, Algorithms, Flask*   July 2020 – April 2021
- Worked with a team in creating **algorithms to compare text documents** and report similarity scores. Ideas from various research papers were implemented to improve time complexity and accuracy
- Documents were then grouped using k-Means clustering based on pairwise similarity scores
- Implemented a working model using Flask to present the project at Open House to Professors and the open public

American Express Default Prediction | *Python, ML, Data Analysis, Boosting*   July 2022 – Present
- Participated in ongoing **Kaggle contest** to predict credit default
- Handled **large amount of data**(>50 GB) and built **LightGBM classifier** to find probability of default
- Obtained an evaluation metric score of 0.78, ranking in **top 200 teams**

POSITIONS OF RESPONSIBILITY

Events Head, Coding and Logic, Shaastra 2022   May 2021 – March 2022
- Headed a team of 20 coordinators and 10 volunteers to conduct pan-India events as a part of Shaastra 2022
- Responsible for a **budget of 750K INR** and managed the **conduction of 15 Events**, attracting more than **6000 participants**

Events Coordinator, Coding and Logic, Shaastra 2021   June 2020 – Mach 2021
- Involved in organizing three events - **Shaastra Programming Contest**, **CP Potpourri** and **E-Contest**
- Prepared problems for and organized multiple nation-wide programming contests on Codechef and Codeforces which saw the participation of more than **800 teams** pan-India

Coordinator & Project Member, Programming Club   July 2020 – April 2021
- Organized **informative sessions** on algorithms and data structures and conducted programming contests
- Worked on Content Similarity Detection with three other project members

COURSEWORK AND TECHNICAL SKILLS

Machine Learning (Coursera)	Pattern Recognition and Machine Learning*	Introduction to Data Analytics*
Data Structures and Algorithms	Basic Graph Theory	Data Analytics Laboratory*

Languages: Python, C/C++, SQL, MATLAB, JavaScript, HTML/CSS
Libraries: pandas, numpy, matplotlib, scikit-learn, tensorflow

CO-CURRICULAR & EXTRACURRICULAR ACTIVITIES

- **Sports** - NSO in Tennis | Represented hostel in Football Schroeter (2019-2020)
- Johns Hopkins University's CTY Talent Search - **Award of High Honors** (2015). Attended a CTY summer course in **Cryptology** at The Hong Kong University of Science and Technology (HKUST) (2017)
- Presented a paper on '**Analysis of Voting Systems**' at AMTI's 50th National Conference (2016)
- Attended a summer course in **Mathematical Problem Solving** at Shiv Nadar University through Duke **TIP**(2015)

CTY - Center for Talented Youth | AMTI - Association of Mathematics Teachers, India | TIP - Talent Identification Program