Aditya **Prakash**

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Education

Indian Institute of Technology Kanpur
B.Tech, Aerospace Engineering
2019–2023(Expected) **9.0/10.0**

BNS DAV Public School, Giridih
CBSE - XII
2019 **97.6%**

BNS DAV Public School, Giridih
CBSE - X
2017 **10.0/10.0**

Interests

Deep Learning, Natural Language Processing,Web Development, Open Source, Astrodynamics, Control Theory, Propulsion, Computational Neuroscience, Cognitive Psychology

Technical Skills

Programming Languages: JavaScript, Python, C, C++
Libraries: Numpy, Tensorflow, PyTorch, OpenCV
Web: React, Node.js, MongoDB, Flask, Canvas
Utilities: Git, LaTeX, LabView, MATLAB

Key Projects

Project Ekatra Github Website
Self Project Nov'20 - Jan'21

- Developed a full-stack web application using the MERN stack and worked primarily on the frontend using ReactJS
- Used word embeddings to recommend similar resources based on user's history
- Converted the project into an opensource organisation with automated testing, building and hosting using Github

Algorithm Visualizer Github Website
Self Project Dec'20- Jan'21

- Built and deployed a **React** website for visualizing various computational algorithms
- Implemented backtracking and various sorting and graph algorithms, including A* and Dijkstra's

LeibTon Github Website
Self Project Nov'20 - Dec'20

- Designed and deployed my portfolio website using HTML5, CSS3, Vanilla Javascript
- Used anime.js and greensockJS to add animation and canvas for image effects and interactions

Facebook Hateful Memes Challenge Github
Self Project Sep'20

- Extracted visual features using pretrained CNN classifier models, namely ResNet and Incetionv3
- Used LSTM, Word Embeddings and Attention Models to learn textual features
- Implemented different multi-modal models to learn relation between textual and visual features

Decoding relation b/w voxels & pixels Github
Prof. Gordon Berman [Neuromatch] July'20

- Worked in a team of 4 members to decode semantic features from different ROIs of the visual cortex
- Extracted semantic features using different classifier DNN's last layers, namely of Resnet50 & VGG16
- Tried dimensionality reduction and clustering techniques to find some clusters among voxel responses

Facial Emotion Recognition Github
Brain and Cognitive Society, IIT Kanpur July'20

- Extracted human faces (using OpenCV haar-cascade) from a camera stream and preprocessed them
- Implemented CNN classifier and trained it on FER2013 dataset and got an accuracy of 97% on JFFE test dataset.
- Designed a model for emotion recognition in video using CNN-RNN and C3D hybrid networks

PETcat (vision) Github
Robotics Club, IIT Kanpur Apr'20

- Worked in a team to develop different vision modules of a user-friendly cat bot
- Implemented Haar Cascade trainer and used it to train a model to detect complex objects and build the ROS package
- Performed Gesture Recognition using OpenCV to understand hand signals

Small Projects
Self Projects

- Gender Predictor for Indian Names using Bidirectional LSTM
- Deployed a react website to study randomness using AutoRegresive Models

Open Source Contributions

einsteinpy Commit

- Improved documentation related to einstein.symbolic jupyter notebooks

Openlibrary Commit

- Displayed the patron's list containing the particular book underneath "Want to Read Button"

Projects Mentored

Analysing Steinmetz Dataset Document
Brain and Cognitive Society, IITK May'21 - July'21
Number of Students: 5

Relevant Courses

Mathematics and Algorithms
Fundamental of Computing Data Structures and Algorithms Linear Algebra

Machine Learning (Online Courses)
Deep Learning Specialization Natural Language Processing

Aerospace Courses
Fluid Mechanics Dynamics Thermodynamics
Incompressible Aerodynamics Mechanics of Solids Experiments in Aerospace Engineering-I

Workshop

Neuromatch Academy
An online school for Computational Neuroscience. July'20

Positions Of Responsibility

Counselling Service, IITK
Student Guide Nov'20 - Present

- Guided a group of 5 students into first year of their college life

Counselling Service, IITK
Academic Mentor Nov'20 - Present

- Guided first-year students in their academic related problems

Brain And Cognitive Society, IITK
Secretary July'20 - July'21

- Organized introductory lectures and workshops for students interested in Computational Neuroscience

Start-up Internship Program, E-cell, IITK
Secretary April'20 - April'21

- Reasoned with start-ups and convinced them to register for SIP, E-cell
- Helped in the smooth conduction of SIP program