

Archit Bhatnagar

PRE FINAL YEAR CS UNDERGRAD

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Education

Birla Institute of Technology and Science(BITS),Pilani

Pilani,India

B.E.(HONS.) COMPUTER SCIENCE

Aug. 2019 - May. 2023

- **Cumulative GPA**- 8.35/10

DAV Public School,Gurgaon

Haryana,India

CLASS XII

May 2017 - April 2019

- Obtained **95.8%** score,**top 0.1 %ile** among 12 lakh candidates
- School Rank-3rd

Our Lady of Fatima Convent School,Gurgaon

Haryana,India

CLASS X

May 2007 - April 2017

- **Cumulative GPA**- 10/10

Research Experience

CEERI-CSIR Chennai

Chennai,India

RESEARCH INTERN

June 2021 - July 2021

- Worked on Texture Classification using both ML(manual Feature Vector generation) and Deep Learning models).
- Implemented **Local Binary Patterns(CLBP & MRELBP)** using **Tensorflow** using **KNN, SVM** & Logistic Regression classifiers.
- Utilized **Transfer learning for Bilinear CNN's & AlexNet models** on texture datasets - classification **accuracy b/w 90-97%**

Deep Blink

Remote

RESEARCH ASSISTANT

July 2021 - Sept. 2021

- Worked on the Machine Learning segment of a **Pose Estimation based Fitness Trainer** mobile application-**Yogi-G**.
- Analyzed **Blaze-Pose based pose estimators** for mobile devices and helped integrate the MediaPipe library to track pose.
- Implemented **Matching score evaluation based on 33 key points** detected and converted to model to TF-lite

Projects

Deep Learning for 3D Posture Classification

PYTHON,TENSORFLOW,DEEP LEARNING

June 2021 - Present

- Currently working on this under Prof. Kamlesh Tiwari,to improve the **accuracy of 3D-Pose Classification**.
- Used Joint **Angular Distance Maps(JADMs)** converted to RGB images as feature vectors fed into **single stream CNN's**
- Optimizing it for 3D-Yoga Poses by **augmented training** on publicly available Action datasets **HDM05 and CMU**.

Yogi-G (An AI-powered Yoga App)

PYTHON,OPENCV,MEDIAPIPE.MATCHING SCORE ALGORITHMS

May 2021 - Present

- Worked on the **posture matching score** for an AI-based fitness and Yoga app able to **track upto 42 different Yoga asanas**.
- Integrated **MediaPipe Library in Android** for optimized tracking on mobile devices detecting 33 key points across the body.
- Adding a **temporal aspect to matching score** for a trainee to continue to replicate a pose from **5 different routines**.

Digital Image Processing in Space Research and Exploration

IMAGE PROCESSING

Jan 2021 - Feb 2021

- Learning Project for the course Image Processing to analyze latest developments in **Astronomical Image processing**.
- Reviewed multiple Astronomical **Image enhancement** and **De-noising Algorithms** and sub-domains necessary currently.
- Analyzed different methods like **Fast Fourier transforms and median filtering** for random and **salt & pepper noises**.

Skills

Programming	Advanced: C/C++ Intermediate: Java Basic: MATLAB,Python
Image Processing	Image Pre-processing,Edge Detection,Noise Removal using Fourier Transformations,Basic Image Encrytion
ML Libraries	TensorFlow,OpenCV,Mediapipe,Sklearn
Others	User Experince(UX) Design,Graphic Designing,Adobe Photoshop & Illustrator

Positions of Responsibility

National Service Scheme (NSS)

BITS Pilani

EXECUTIVE COMMITTEE MEMBER

Aug. 2019 - July 2021

- **Managed a team of 10 volunteers** for Publicity of the events organized by NSS BITS-Pilani.
- Managed the social handles in order to publicize events like **Blood Donation Camp(collected 682 units of blood** in association with Red Cross Society).
- Assisted in organizing **Conferencia De Youth**(Platform for discussions & ideations on social causes for **students from over 15 colleges**) and Sports Day for Differently-abled students accross the schools of Pilani,Rajasthan.

Extracurricular Activity

Student Union BITS Pilani

BITS Pilani

CORE COMMITTEE MEMBER

Aug 2019 - May 2020

- In coordination with the General Secratary helped in communicating and resolving problems encountered by students
- Managed the merchandise for **4000 students** on College's Cultural Fest **Oasis** BITS-Pilani

National Service Scheme (NSS)

BITS Pilani

VOLUNTEER(GRAPHIC DESIGN), DEPARTMENT OF DESIGN AND DEVELOPMENT

Aug. 2019 - July 2021

- Designed the **UI/UX of The NSS App** which assists over **300 NSS volunteers** in recruitments and Event/School attendance
- Worked as a graphic designer and designed posters, brochures and banners for various social events organized by NSS.

Scholarships Awarded

2019 **HSCTSS (HARYANA SCIENCE TALENT SEARCH SCHEME)**, Rs.36,000 for NTSE Stage -1,by SCERT Haryana

Haryana, India

Achievements

- JEE (Mains)-Obtained a rank of **5389 among 1.2 million** students(**top 0.5 %ile**) who appeared for the test in 2019
- CBSE Board Examinations- Obtained **95.8% marks** in Science Stream(with Computer Science),was in the **top 0.1 %ile among 1.3 million** students in 2019

Relevant Coursework

- **University:** Image Processing, Probability and Statistics, Linear Algebra, Differential Equations, Multivariate Calculus, Data Structures and Algorithms, Object Oriented Programming,Linguistics.
- **Other:** Machine Learning(Coursera, Audit),Deep Learning & Applications(Coursera, Audit), TensorFlow for DL(NPTEL)