

# Ashmit Khandelwal

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Pre-Final year Computer Science student at BITS Pilani. I have a strong interest in Deep Learning, particularly Computer Vision. I've worked on projects involving Computer Vision and Machine Learning. Aim to further my knowledge in Deep Learning concepts and research, and work on projects to implement new ideas.

## Education

### Birla Institute of Technology and Science, Pilani

B.E. COMPUTER SCIENCE, WITH MINOR IN DATA SCIENCE

Current CGPA: **9.51/10**

Goa, India

2020 - 2024 (expected)

## Work Experience

### National Centre for Polar and Ocean Research

Remote

#### RESEARCH INTERN

June - July 2022

- Worked on **Forecasting** of Antarctic weather, using **Deep Learning** models on **time-series** data gathered from Indian Antarctic research stations.
- **Implemented and compared** various Deep Learning models, such as **1D CNNs, LSTMs, and Seq2Seq** models.
- Used **trend, seasonality, and auto-correlation** for deciding model architecture and tuning parameters.

## Projects

### Image Super Resolution

#### CODE AND REPORT

Feb 2022

- Developed a **Convolutional Neural Network** to **upscale low resolution images**, by a factor of 2.
- **Contrasted model architecture** designs, such as **CNNs, ResNets, Transposed Convolution, and SubPixel Convolution**. Prepared a detailed report for the same.

### Bayesian Multi Layered Perceptron

#### CODE AND REPORT

Feb 2022

- A **Bayesian MLP** to classify a simple XOR dataset. The model can easily be extended to work with more complex datasets.
- Defined **posterior and likelihood functions**, and used Markov Chain Monte Carlo Sampling. Specifically used the **Metropolis-Hastings algorithm**, for **optimal weight sampling**. Produced a brief report of the results.

### Stashify - Spotify Playlist Archive

#### PERSONAL PROJECT | REPOSITORY

Feb 2022 - ongoing

- Developing an **API and web interface**, wrapping the **Spotify API**, to **archive stale songs** in a Spotify user's playlist. The API allows said archived songs to be **restored** in the future.
- Using **MongoDB** for storing playlist archives, **ExpressJS** for writing the API, and **OAuth** for authenticating and connecting with Spotify.

## Courses

**University Coursework:** Object Oriented Programming, Data Structures and Algorithms, Discrete Structures in Computer Science, Database Systems, Probability and Statistics, Linear Algebra

**Workshops/Schools:** Amazon ML Summer School 2022, 6th Summer School on AI\* @ CVIT, IIITH.

\* = ongoing

## Teaching Experience

### QSTP 2022: Introduction to Deep Learning

#### CO-INSTRUCTOR | QUARK, BITS PILANI - GOA

July 2022 - ongoing

- Co-instructing for the Introduction to Deep Learning course.
- The course provides introductory knowledge about Deep Learning, Computer Vision, Natural Language Processing, and Generative Models.

## Skills

**Programming Languages:** Python, Javascript, Typescript, Java, C/C++, SQL, HTML/CSS

**Frameworks and Libraries:** PyTorch, Tensorflow/Keras, Numpy, Pandas, Scikit-Learn, MongoDB, ExpressJS, ReactJS

## Committees

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2022 **Member**, Society for Artificial Intelligence and Deep Learning  
2021 **Core Member**, Developer's Society, BITS Goa

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