

# Arnav Deshpande

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## Education

VIT University, B.Tech [🔗](#)

Jul 2019 – present | Vellore, India

CSE with a specialization in Bioinformatics

• CGPA = 9.12

• Transcript | Courses Studied [🔗](#)

## Research Projects

**Patent - Smart Stethoscope,**

Application No.: 202241003742 | Journal-05/22

An IOT based device, that transmits heartbeat sounds directly to the cloud, from where a model processes it, to give the model a score, which the user can access on his mobile device. [🔗](#)

**Protein Visualization, Springer- Biomolecular NMR**

Guide : Dr. Narayanan Prasanth [🔗](#)

Processing Protein Sequences on the basis of their Amino Acid Structures, using Open MP, MPI acceleration. [🔗](#)

**Breast Cancer Detection, IEOM 2022** [🔗](#)

Machine Learning and Deep Learning algorithms like KNN, SVM, Random Forest, MLP, and Naive Bayes are used for breast cancer diagnosis and accurate prediction. The primary dataset used is the Wisconsin Dataset for Breast Cancer.

**Music Mood Prediction using CNN,**

ISMIR 2022 [🔗](#)

A two-level classification. Music clips are classified as energetic or non-energetic at the first level and are classified into one of six emotions at the second stage. The model offers an accuracy of 86 %.

## Projects

**Biomedical Text Mining, NLP, Python** [🔗](#)

- Named Entity Recognition was done on Biomedical entities. A Hybrid Bi-LSTM CRF model was designed. 4 annotated datasets were fed to the model.
- A multi-task learning framework was used.
- Guide: Dr. Rajeshkannan R. [🔗](#)

**Cell Ageing, Tensorflow, Numpy, Pandas** [🔗](#)

- An Epigenetic Clock, which finds out the cell's age by reading its methylation index. A replication of the AltumAge Epigenetic Clock.
- An improved accuracy of 42 % over other clocks.

**Effective Queue Management, Python, CV** [🔗](#)

- Face Recognition was used to track the object.
- The Queue ID was reassigned as the object moved out of the frame.

## Experience

**Summer Research Intern, IIIT Bangalore**

May 2022 – present

- Worked upon Image Similarity Analysis among images across Feature Outputs in CNN layers. The primary Classes taken up for analysis were Lorry Images. ORB and SSIM Similarity is applied to the Feature Maps.
- Studied the different approaches that can be considered for the practical applications in Federated Learning.

**Senior Core Committee Member,**

Biotech Research Society of India, VIT Chapter [🔗](#)

Dec 2019 – present | Vellore

- Developed a pipeline that detects cell ageing by scrutinizing the methylation index of the cell, using Python and Deep Learning.
- Linear Regression was used and the Epigenetic Clock Developed showed 42% more accuracy than the existent ones.
- Write articles for the Chapter Website. [🔗](#)
- Collaborate with peers to Study Bioinformatics Related Research Papers.

**Machine Learning Intern, E-Cell, IIT Kharagpur** [🔗](#)

Apr 2020 – May 2020 | Remote

- Learnt how ML is applied in the Industrial Applications.
- Developed a Pipeline that helps in Drug Discovery using SVMs, And Bayesian Algorithms.

## Skills

Research • Deep Learning • Machine Learning  
Python • Bioinformatics • IoT • C / C++  
SQL • Flask • Latex • Github

## Awards

**Best Paper Award, Convener, INEST Conference** [🔗](#)

Oct 2019

- Presented a Paper at the I-NEST Conference and was awarded the Best Paper Award. [🔗](#)
- The Paper stood 1st in its domain among more than 50 Contestants.

## Certificates

**Statistical Data Analytics - Business Research** [🔗](#)

Obtained Marks - 97/100

**Big Data Analytics - NASSCOM** [🔗](#)

Gold Badge - (92/100)