

# Nithya Shikarpur

🏠 [snnithya.github.io](https://snnithya.github.io) | ✉ [snnithya@gmail.com](mailto:snnithya@gmail.com) | 🌐 [snnithya](#) | 💻 [snnithya](#) | 📺 [Nithya Shikarpur](#)

## EDUCATION

### BIRLA INSTITUTE OF TECHNOLOGY AND SCIENCE (BITS), PILANI

B.E. IN COMPUTER SCIENCE  
August 2016 - December 2019 |  
Goa, India  
CGPA: 8.46/10

## SKILLS

Machine Learning • Deep Learning •  
Data Mining • DBMS •  
Probability and Statistics • Statistical  
Inferences and Applications

### PROGRAMMING

Python • C/C++ • Java • Javascript •  
HTML5/CSS •  $\text{\LaTeX}$

### PYTHON LIBRARIES

Tensorflow • Keras • Pytorch •  
Scikit-Learn • Librosa • Matplotlib •  
Essentia

## TEACHING &

## LEADERSHIP

### TEACHING ASSISTANT

BITS Goa

Helped with the teaching and assignment creation and evaluation for the introductory course on Computer Programming.

### CORE MEMBER, MUSIC SOCIETY

BITS Goa

In charge of a group of 40 musicians.  
Handled administrative tasks and organized performances for the members.

## EXTRA-CURRICULARS

### Music

Trained Hindustani vocalist for the past 20 years. Self taught in other genres of music such as pop, jazz, blues.

Won several national level competitions and performed internationally.

### DANCE

Trained Bharathanatyam dancer for the past 16 years.

Danced at many festivals in group and solo performances and won prizes.

## EXPERIENCE

### DIGITAL AUDIO PROCESSING LAB, IIT BOMBAY | RESEARCH

#### ASSISTANT

December 2020 - Present | Mumbai, India

Working with [Dr. Preeti Rao](#) on projects in the fields of music information retrieval and computational musicology for Indian classical music.

- Worked on a computational analysis of melodic mode switching in raga performance. [Paper](#) presented at "[International Society for Music Information Retrieval \(ISMIR\) 2021](#)" [2].
- Working with Dr. Preeti Rao and [Dr. Clayton Martin](#), Durham University to provide visualisations of audio examples in Indian classical music.
- Working on a multimodal analysis system to study the link between hand gestures and melodic content sung by Hindustani singers using deep learning.

### ONEIRIX LABS | CONSULTANT

August 2020 - December 2020 | Pune, India

Worked on developing image matching techniques with deep learning using both models built from scratch and transfer learning.

### MCAFFEE | RESEARCH INTERN

July 2019 - May 2020 | Bangalore, India

Worked with [Dr. Abhishek Tripathi](#) to develop models for malware detection.

- Built models for malware detection in IoT devices. Involved in literature review, data collection and model creation processes. Contributed towards my [undergraduate thesis](#).
- Helped develop a novel model for detection of malware in partially downloaded binary files. Listed as an inventor on the patent application filed for this project [1].

### CISTUP, IISC | RESEARCH INTERN

May 2019 - July 2019 | Bangalore, India

Worked with [Dr. Tarun Rambha](#) on the analysis and visualisation of bus bunching using GPS and ticketing data collected by BMTC buses in Bangalore. Work is available [here](#).

### BITS PILANI, GOA | RESEARCH INTERN

Jan 2018 - May 2019 | Goa, India

Worked with [Prof. Hemant Rathore](#) on detecting malignant APK files using opcode frequency and permissions granted. Explored various ML classification and clustering techniques.

### HEADOUT | SOFTWARE DEVELOPMENT INTERN

May 2018 - July 2018 | Bangalore, India

Automated intra-company reporting system for employees. Used APIs to access employee metrics. Used Javascript and Python to process and send out daily reports automatically.

## PUBLICATIONS & PATENTS

[1] Named inventor on pending patent application (not yet published).

[2] N. Shikarpur, A. Keskar, and P. Rao. Computational analysis of melodic mode switching in raga performance. In *Proc. of the 22nd Int. Soc. for Music Information Retrieval Conference*, 2021.