# Nithya Shikarpur

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## EDUCATION

### UNIVERSITÉ DE MONTRÉAL
Masters in Computer Science
September 2022 - Present | Montreal, Canada

### 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**

**Advanced**
Python •

**Intermediate**
C/C++ • Javascript • HTML5/CSS •

**Beginner**
Java • LaTeX

**Python Libraries**
Tensorflow • Keras • Pytorch • Scikit-Learn • Librosa • Matplotlib

## TEACHING & LEADERSHIP

**Teaching Assisstant**
BITS Goa
Helped with teaching, and assignment creation and evaluation for the introductory course on Computer Programming.

## 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

### MILA | Researcher
September 2022 - Present | Montreal, Canada
Working with Dr. Anna Huang on projects focusing on music generation with Artificial Intelligence.

### DIGITAL AUDIO PROCESSING LAB, IIT BOMBAY | Research Assistant
December 2020 - June 2022 | 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 [3].
- Developed a multimodal raga detection system for Hindustani vocalists using deep learning. Paper presented at "International Society for Music Information Retrieval (ISMIR) 2022 [2]

### 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.

### MCAFEE | Research Intern
July 2019 - May 2020 | Bangalore, India
Worked with Dr. Abhishek Tripathi to develop models for malware detection.

- Built ML models for malware detection in IoT devices. Contributed towards my undergraduate thesis.
- Developed a novel model for detection of malware in partially downloaded binary files. Listed as an inventor on the patent application filed [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. [LINK].

### 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 using clustering and classification techniques.

### HEADOUT | Software Development Intern
May 2018 - July 2018 | Bangalore, India
Automated intra-company reporting system for employees. Used APIs to access employee metrics with Javascript and Python.

## PUBLICATIONS & PATENTS

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

[2] M. Clayton, P. Rao, N. Shikarpur, S. Roychowdhury, and J. Li. Raga classification from vocal performances using multimodal analysis. In *Proc. of the 23rd Int. Soc. for Music Information Retrieval Conference*, 2022.

[3] 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.