

# Shraddha Sharma

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## AREAS OF INTEREST

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Signal Processing, Machine Learning, Artificial Intelligence

## EDUCATION

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### Nanyang Technological University

*Master of Engineering in Robotics and Artificial Intelligence*

Overall GPA: 3.83/5.0

**Singapore**

*Jan 2018 - Jan 2020*

### The LNM Institute of Information Technology

*Bachelor of Technology in Electronics and Communication Engineering*

Overall GPA: 7.74/10.0

**Jaipur, India**

*Aug 2012 - Jun 2016*

## ACADEMIC PROJECTS

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### Nanyang Technological University

*Masters Project Title: Indian Classical Vocal Training Tool*

**Singapore**

*Jan 2018 - Jan 2020*

- Designed and developed a personalized vocal training tool for learning Indian Classical music.
- Implemented machine learning algorithms to provide detailed analysis of user's vocal ability.
- Research work got accepted for poster presentation at "Women in Music Information Retrieval" workshop, Paris.
- Paper published in International Conference on Intelligent Autonomous Systems (ICoIAS 2019), Singapore.

### The LNM Institute of Information Technology

*B.Tech. Project Title: Wireless Transmission of Solar Power*

**Jaipur, India**

*Aug 2015- May 2016*

- Devised a system for capturing solar power and calculated its efficiency.
- Generated a simulation model of the Antenna system for wireless transmission of Solar power.

## WORK EXPERIENCE

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### Biofourmis Pvt. Ltd.

*Data Scientist*

**Singapore**

*Apr 2021 - Nov 2023*

- Formulated and executed a signal processing based research concept to detect Obstructive Sleep Apnea using ECG signals.
- Created machine learning models to identify Sleep Apnea and QT anomalies. Enhanced an existing model for detecting Atrial Fibrillation.
- Devised a signal processing algorithm to detect pauses.
- Acquired research expertise in examining clinical guidelines, journals, databases, and systematic review papers to develop the machine learning model.
- Developed proficiency in designing model specifications and interpreting ECG patterns

### Entrepreneur First

*Founder in Residence (CTO)*

**Singapore**

*Feb 2021 - Mar 2021*

- Build the model for bridging the gap between music instructors/schools and students.
- Designed a Figma based mock prototype and python based Graphical User Interface (GUI) for customer validation.

### Singapore Mass Rapid Transit (SMRT) Lab@NTU

*Research Engineer*

**Singapore**

*Jan 2020 - Jan 2021*

- Worked on SMRT team project of signal classification.
- Built a machine learning model to classify different SMRT signals and detect the interfering signal.
- Developed a pattern recognition algorithm using statistical approach.

#### **Dauwels Lab@NTU**

*Project Officer*

**Singapore**

*Apr 2019 - Oct 2019*

- Worked on 2 team projects of human behaviour analysis.
- Extracted emotional features from the video data by applying "Affectiva Algorithm" and processed it to extract meaningful information.
- Labelled audio data and created a bash script to edit video data.
- Implemented time-series analysis on video data by calculating correlation between different emotions and created hypothesis to find collaboration.

#### **Hacklab Innovations Pvt. Ltd.**

*(Intern) Embedded Engineer*

**Bengaluru, India**

*Jul 2017 - Nov 2017*

- Worked on individual projects of embedded systems including indoor localization and asset tagging system.
- Calibrated water level sensor and plotted real time graph to display water level.
- Interfaced different sensors with MSP430-EXP5529LP and implemented UART, SPI and I2C communication.

## **TECHNICAL SKILLS**

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<b>Computer Languages</b>	Python- sklearn, numpy, pandas, tensorflow, Bash(Shell scripting)
<b>Hardware Platforms</b>	Arduino, BeagleBone, Raspberry Pi
<b>Electronics Tools</b>	Microwind, Xilinx, VHDL
<b>Misc Tools</b>	LaTeX, Vim, Git

## **AWARDS AND ACHIEVEMENTS**

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#### **ICoIAS Conference, NTU, Singapore**

*28 Feb - 1st Mar 2019*

- Paper titled "Design and Development of Indian Classical Vocal Training Tool" accepted for publication and received best presentation award in 2nd International Conference on Intelligent Autonomous Systems(ICoIAS).

#### **Singapore-India Hackathon, NTU, Singapore**

*12-14 Nov 2018*

- Selected in top 10 teams of Singapore-India Hackathon.
- Developed a tool for Wayfinding and included features like Wi-Fi strength, QR code, Visual aid(Camera) and audio signature identifier for indoor tracking.

#### **Poster Presentation, Paris, France**

*28 Sep 2018*

- Research Work on Indian Classical Vocal Training tool selected for poster presentation in Women in Music Information Retrieval(WiMIR) workshop.
- Developed project on Discovering Emotion from Musical Segments in a team project session of WiMIR.

#### **Open Source Initiative**

*Apr 2017*

- Terminal Vocabulary Trainer for OSX and Linux.

[github.com/shraddha-hna/wonder-word](https://github.com/shraddha-hna/wonder-word)

#### **Line Follower Robot, IIT Kharagpur, India**

*Feb 2013*

- First Prize in Autonomous Line Follower Robotic Competition.
- Later, a PID-based implementation was done for Robo race in IIT Kharagpur (Kshitij 2013).

## **Co-Curricular Activities**

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- Winner of International Dance Championship in Singapore.
- Bollywood Dance Crew leader of NTUGSA group of NTU, Singapore.
- Event Organiser and emcee of Fresher's got talent and Karaoke Night in NTU, Singapore.
- Yellow belt holder in Karate and Sports Captain for Basketball and Kho Kho in School.
- Vocal Training in Hindustani Classical Music.
- Dance Competition winner for several consecutive years in school.