

Nivedya S Nambiar

✉ nivedyasureshnambiar@gmail.com

✉ 190070039@iitb.ac.in

in Nivedya Nambiar

☎ +91 7994803493

Education

2019-2023	📖 Bachelor of Technology , Electrical Engineering Minor in Healthcare Informatics Indian Institute of Technology Bombay	9.31/10.0
2017-2019	📖 Higher Secondary School , CBSE Veda Vyasa Vidyalayam	98%
2007 – 2017	📖 Secondary School , CBSE Devagiri CMI Public School	10.0/10.0

Internships

May-Jul 2022	📖 Verification Engineer , APT Portfolio Limited. Designed a module specific plugin in C++ for interfacing between C++ and Python
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Projects

Jan-May 2023	📖 Neuron Model for Filtering Noisy Speech , Bachelor's Thesis Project - 2 <i>Guide: Prof. Udayan Ganguly</i> <ul style="list-style-type: none">■ Developed model using spiking neurons for gating away noise from speech in time domain■ Tested gated version of noisy input for speech classification tasks
March-May 2023	📖 Eye Blink Artifact Detection in EEG , R&D Project <i>Guide: Prof. Kshitij Jadhav</i> <ul style="list-style-type: none">■ Implemented an unsupervised model for eye blink artifact detection in EEG
Aug-Nov 2022	📖 Astrocyte Modulated Synaptic Plasticity in LSMs , Bachelor's Thesis Project <i>Guide: Prof. Udayan Ganguly</i> <ul style="list-style-type: none">■ Implemented spike timing dependent plasticity rule for liquid state machines proposed by Ivanov et al.■ Introduced modifications to plasticity rule for improving accuracy in speech recognition
Oct-Nov 2022	📖 Multimodal Neurons in LSMs , Course Project, Neuromorphic Engineering <i>Guide: Anmol Biswas, Prof. Udayan Ganguly</i> <ul style="list-style-type: none">■ Developed a liquid state machine capable of combining information from visual and auditory modalities to classify digits, working in a group of 3
Jan-Apr 2022	📖 Visible Light Communication , Course Project, Electronic Design Lab <i>Guide: Prof. Joseph John</i> <ul style="list-style-type: none">■ Devised a visible light communication module operating with on-off keying as a member in a group of 3■ Assembled a PCB and tested transmission of pseudo random bit sequences at rates up to 700kHz, and distances up to 30cm

Projects (continued)

- Apr-Aug 2020 ■ **Team Cleanoid**, User Assisted Robot to Aid in Cleaning
Institute Technical Summer Project IIT Bombay
- Evaluated impact of COVID-19 on the health of sanitation workers without access to protective gear
 - Ideated on robot capable of vacuuming and surface disinfection as a member in a team of 4
 - Prepared blueprint of the robot including complete technical specifications of required components
- Jan-Apr 2021 ■ **Sweat-Based MEMS Glucose Monitor**, Course Project, Biomedical Microsystems
Dept. of Biosciences and Bioengineering, IIT Bombay
- Analysed advantages and disadvantages of existing methods of glucose measurement
 - Reviewed research papers on non-invasive glucose measurement techniques and their working principles
 - Ideated on design for a sweat-based micro-electro-mechanical system glucose monitor
- Nov 2021 ■ **Vaccine Certificate Generation**, Course Project for Introduction to Public Health Informatics, extended to Self Project
Koita Centre for Digital Health, IIT Bombay
- Analyzed need for automatic generation of immunization certificates
 - Developed Python script to create database to store patient details, table of vaccines recommended by the Indian Academy of Pediatrics, and record of vaccinations using MySQL
 - Designed simple GUI using the Python library tkinter to edit and view tables in database, and to generate immunization certificates
- Dec 2020 ■ **Arithmetic Logic Unit**, Course Project, Digital Systems
Dept. of Electrical Engineering, IIT Bombay
- Implemented an arithmetic logic unit for addition, subtraction, logical NAND and XOR in a team of 3
 - Compiled Kogge Stone fast adder coded using structural VHDL and validated working with a testbench
- May 2021 ■ **Support to COVID-19 Task Force**, Voluntary Self-Project
Aster MIMS Kozhikode
- Developed android application used by medical personnel on COVID-19 task force using MIT App Inventor
 - Simplified death bulletin reporting system using Google forms for a user-friendly interface

Key Positions Held

- Sep 2020-May 2021 ■ **Jr. Control Engineer**, SeDriCa, UMIC IIT Bombay.
Team working on developing India's first self-driving car
- Evolved understanding of non linear model predictive control for its application in controlling the car
 - Developed snippets of code to achieve tracking of pre-defined trajectories
 - Participated in recruitment process of freshmen as an evaluator

Skills

Languages	English, Hindi, Malayalam
Coding	Python, C++, MATLAB, VHDL, Julia, \LaTeX , MySQL
Assembly Languages	Embedded C for 8051 Programming, Assembly language programming for 8051, 8086 and MIPS
Misc.	Git, Arduino, Experience with Gazebo and ROS, AutoCAD, SolidWorks

Awards and Achievements

2020	Conferred with AP Grade for exceptional performance in MA 106, an Introductory Course on Linear Algebra, Indian Institute of Technology Bombay
2019	Secured All India Rank of 697 in JEE Advanced conducted by IIT Roorkee leading to admission into undergraduate studies at IIT Bombay
	Attained a percentile of 100 in Mathematics and a total percentile of 99.906 in JEE Mains
2017	Achieved All India Rank 407 in Kishore Vaigyanik Protsahan Yojana (KVPY) fellowship examination (Stream SA) held by Indian Institute of Science, Bangalore
2018	Achieved All India Rank 1376 in Kishore Vaigyanik Protsahan Yojana (KVPY) fellowship examination (Stream SX) held by Indian Institute of Science, Bangalore
	Secured International Rank 288 in the SOF International Mathematics Olympiad competition
2016	Qualified State Level National Talent Search Examination in Kerala State

Extracurriculars

2014-15	Member of Scientia, Students' Science Club at the Regional Science Centre and Planetarium Calicut
2016	Achieved Certificate of Merit in the Grade 5 examination for Piano conducted by Trinity College London
2018	Stood first in Calicut District Finals of Infinitum, the annual Mathematics Quiz for high-schoolers conducted by Club Mathematica, National Institute of Technology, Calicut
2015	Won Third Place in Western Music group competition at the CBSE Kalotsav organized by the Sahodaya Schools Complex Malabar Region