

Nivedya S Nambiar

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🌐 Nivedya Nambiar

🌐 <https://nivedya-27.github.io/nivedyanambiar/>

Education

2019-Present	📖 Bachelor of Technology , Electrical Engineering 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

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.■ Evaluated the network for the task of speech recognition, with additional modifications to improve the accuracy
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
Apr-Aug 2020	📖 Team Cleanoid , User Assisted Robot to Aid in Cleaning <i>Institute Technical Summer Project IIT Bombay</i> <ul style="list-style-type: none">■ 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

Projects (continued)

- 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

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, L^AT_EX, 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 held by Indian Institute of Science, Bangalore

Awards and Achievements (continued)

- 2018  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