Nivedya S Nambiar

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🌐 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

Projects

Aug-Nov 2022

Astrocyte Modulated Synaptic Plasticity in LSMs, Bachelor's Thesis Project
Guide: Prof. Udayan Ganguly
- 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
Guide: Anmol Biswas, Prof. Udayan Ganguly
- 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
Guide: Prof. Joseph John
- 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
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

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 Certicate 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, 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

Awards and Achievements (continued)

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