



Akshay Ganesh Iyer
Electrical Engineering
Indian Institute of Technology, Bombay

190070006
B.Tech.
Gender: Male
DOB: 22-11-2001

Examination	University	Institute	Year	CPI / %
Graduation	IIT Bombay	IIT Bombay	2023	
Intermediate	Maharashtra State Board	Ratanbai Walbai Junior college of Science	2019	91.23%
Matriculation	ICSE	Smt. Sulochanadevi Singhanian School	2017	97.83%

Pursuing Minor degrees in **AI and Data Science** and **Computer Science and Engineering** (2021)

SCHOLASTIC ACHIEVEMENTS

- Secured All India Rank **265** in JEE Advanced among over 0.2 million candidates (2019)
- Achieved All India Rank **228** in JEE Mains among over 1.3 million candidates (2019)
- Secured All India Rank **109** and **196** in KVPY exam in grade 11 and 12 respectively (2017,2018)
- Among the **top 1% (top 300)** at National level in NSEJS, NSEC, NSEP and NSEA (2016, 2018, 2019)
- Awarded the **Gopalkrishna Singhanian gold medal and scholarship** for the **best student** in the fields of **leadership, academics, personality and extra-curriculars** at Smt. Sulochanadevi Singhanian School, rated as the **best school in India**, by Hindustan Times in 2015 (2017)
- Secured **rank 1 internationally** in Science, in the **IAIS exam organised by UNSW Global**, among students from 16 countries, and was one of the only 5 students to receive a gold medal across all subjects (2016)
- Among the **national top 5**, in a series of exams and debates conducted by BAYER Foundation, to represent India in an experiential science camp in the USA conducted by XSCI, University of Colorado, Boulder (2015)
- Represented Singhanian school, in an international student exchange program with a school in Germany (2015)
- Secured **1-3 ranks at International level** at various Olympiads conducted by SOF in school (2012-17)

PROFESSIONAL EXPERIENCE

Protection Information and Data Integrity check in NVMe (May-July 2021)
Samsung Research India Campus- Bangalore | Technology intern

- Analysed the **NVMe interface** in detail, different **NVMe IPs**, **DDR memory** and the **axi4 interface**
- Studied the NVMe spec sheet and understood its functional flow in detail
- Implemented **protection checks**, to ensure proper transmission of data across various IPs, and analysed the **8 bit protection information** appended to the stored data to ensure **data integrity** in **SSD drives**

Implementing and improving a conversational chatbot (December-January 2021)
AllInCall research and Technology solutions | Data Science and AI intern

- Cleaned data using **language translation** tools and **NLP techniques** like **lemmatization** and **stemming**
- Implemented a neural network using **bi-directional LSTM's**, to classify queries into a predefined query set
- Achieved a final accuracy of over **90%** while classifying queries over a complex dataset with multiple languages

KEY PROJECTS

Deep Learning for Data Compression (April-June 2020)
Seasons Of Code | Web and Coding Club

- Implemented a **neural network** to achieve data compression, which rearranged a number sequence according to a pattern observed in the training data, by implementing **attention mechanism** using a **Seq2Seq model**
- Trained various different neural networks using **Tensorflow 2**, by implementing **convolution neural networks**, **recurrent neural networks**, **general adversarial networks**, **LSTMs**, and **GRUs**
- Analysed **language translation models** and **Natural Language Processing**, to implement **attention**
- Dealt with datasets using **Pandas**, **Numpy**, and **Matplotlib** while implementing machine learning models

Stock Market Analysis and prediction using Data Science (December 2020)
Course Project | Prof Amit Sethi Prof Manjesh Hanawal, IIT Bombay

- Analysed and compared the performance of various sectors of the **stock market** during the Covid-19 pandemic
- Performed data analysis on **NIFTY sectoral indices** and compared them using various technical indicators
- Compared the performance of neural network architectures such as **CNN's** and **GRU's** to predict stock prices

Digital Logic Design in VHDL (February-April 2021)
Course Project | Prof Maryam Baghini, Prof Virendra Singh, IIT Bombay

- Utilized **Behavioural** modelling to design an **FSM** that plays a musical tone on a Krypton board
- Optimized combinational circuits and programmed their architectures using **structural VHDL**
- Designed a **16-bit Kogge Stone fast adder** using structural description in VHDL in Quartus
- Verified designs by performing simulations on all possible inputs using **scan chains** on TIVA-C board

Autorickshaw fare

(March 2021)

Course Project | Prof V. Rajbabu Prof S. Vijayakumaran, IIT Bombay

- Implemented an autorickshaw meter on the **Atmel AT89C51** Micro-controller with an **LCD Module**
- Coded the micro-controller in **Embedded C** using **Keil μ Vision** and **Flip softwares**
- Used **UART** Module and **RealTerm** software for interfacing between a keyboard and micro-controller

Disease Detection in Plants

(April-June 2020)

Institute Technical Summer Project

- Implemented a deep learning structure with an **accuracy of over 95%** using **convolution neural networks**
- Designed the website **frontend and backend** using **Django**, that detected diseases using photos of leaves

Mars Rover Team

(June 2020-June 2021)

Image Processing

- Team Member in the Image Processing subdivision of the Mars Rover Tech team that stood **4th** in overall ranking in The Indian Rover Design Challenge 2020 (IRDC) among **28 teams from 7 different countries**
- Implemented **open-CV functions and their applications** in image processing, like using various filters to eliminate different kinds of noise in images, and helping the rover detect the location of objects around it
- Learnt about, and implemented the **ROS** (Robot Operating System) framework to write software for robots

POSITIONS OF RESPONSIBILITY

Pronites Coordinator | Mood Indigo

(2020)

50th edition of Asia's largest cultural festival | 100k+ viewership | 100+ events

- Working in a team of **60**, to ensure smooth execution of concerts as part of the **first-ever online** Mood Indigo
- Conceptualizing and ideating **Livewire** - a band competition for semi professional bands in **10+** cities of India, and contacting musicians to participate in the same, inspite of the problems due to the Covid-19 pandemic
- Facilitated functioning of the **International Music Festival (IMF)**, as an organiser during Mood Indigo 2019

Department Academic Mentor | Department of Electrical Engineering

(2021)

- Among the 35 selected from **86 applicants** on the basis of extensive **interviews** and **peer reviews**
- Mentoring **8 sophomores** to help them with academics, time management and extra-curricular endeavours

TECHNICAL SKILLS

Programming	C++, Python, Java, Julia, MATLAB, Embedded C, Assembly language, VHDL
Web Development	HTML, CSS, Javascript, Django, SQL
Python Libraries	NumPy, Pandas, Matplotlib, Tensorflow 2.0, OpenCV, Scikit-learn, PyTorch
Tools	Git, AutoCAD, SolidWorks, L ^A T _E X, Microsoft Office

KEY COURSES UNDERTAKEN

Electrical Engineering	Power Electronics, Analog Circuits, Digital Systems, Signal Processing-I, Probability and Random Processes, Microprocessors, Markov Chains and Queuing Systems, Control Systems, Nanoelectronics, Communication Systems*
Computer Science	Data Structures and Algorithms, Design and Analysis of Algorithms*, Foundations of Intelligent and Learning Agents*
Data Science	Programming in Data Science
Mathematics	Calculus, Linear Algebra, Complex Analysis, Differential Equations
Physics	Quantum Physics and Applications, Basics of Electricity and Magnetism

*Will be completed by November 2021

EXTRACURRICULAR ACTIVITIES

- An active member (Vocalist, guitarist and keyboardist) of **Symphony**, the music club of IIT Bombay (2019)
- Won **1st place at the music arcade band competition**, representing hostel 3, and was also recognised as the **best vocalist of the competition**, among the best musicians of the institute, across 10 bands (2020)
- Performed at **Surbahaar, the biggest music event in IIT Bombay**, in freshman year, for **1500+ people** (2020)
- Represented Hostel 16 at the **Goonj Music General Championship** (2020)
- Created a musical original composition as part of the Institute Cultural Summer Project (ICSP) 2020 (2020)
- Participated in **"SHOWSTOPPER"- The Biggest Fashion Showcase of IIT Bombay**, organised by the fashion club, and performed in Convocation Hall in front of a crowd of **about 1500 people** (2020)
- **Second runner up** for the Mr. Freshie 2019 competition among around **1000 new freshmen**, which consisted of various rounds of personality testing, group discussions, interviews, a ramp walk, and a talent show (2020)
- Represented hostel 3 in the **Badminton general championship** 2020 (2020)
- Successfully completed the 2-semester **NSO course for Badminton** (2020)

Scholastic achievements and extracurricular activities are not verified by the Placement Cell