**Prasann Viswanathan Iyer** | **190070047**
**Electrical Engineering** | **B.Tech.**
**Indian Institute of Technology, Bombay** | **Gender: Male**
**DOB: 02-11-2001**

| Examination | University | Institute | Year | CPI / % |
|---|---|---|---|---|
| Graduation | IIT Bombay | IIT Bombay | 2021 | |
| Intermediate | HSC, Maharashtra | PACE Junior Science College, Thane | 2019 | 89.54% |
| Matriculation | ICSE | Sri Sri Ravishankar Vidya Mandir | 2017 | 97.50% |

Pursuing a minor in **Computer Science & Engineering**.

## Academic Achievements

- Received an **AP grade** in EE207: Electronic Devices & Circuits, awarded to **3 of 166** *(May 2021)*
- Achieved All-India Rank **285** out of 173,000 participants in **JEE (Advanced) 2019** *(May 2019)*
- Achieved All-India Rank **677** out of 1,000,000 participants in **JEE (Main) 2019** *(April 2019)*
- Eligible for the **INSPIRE Scholarship** (Innovation in Science Pursuit for Inspired Research) by virtue of performing in **top 1%** at **Class XII (HSC)** exams *(May 2019)*
- Stood **first** in school in the **ICSE Board Examinations**, with a score of **100** in **Mathematics** and **Computer Applications**, **98** in **Science** and **94** in **English** *(May 2017)*
- Awarded a **Gold Medal** in the **Dr. Homi Bhabha Balvaidnyanik Competition** *(May 2016)*

## Professional Experience

**Full-Stack Engineer** | **MeTripping Technologies Pvt. Ltd** *(May-July 2021)*

- Developed a **web scraping spider** using the **scrapy python library** to scrape weather data daily, of over **20 thousand** travel destinations, **without spending money** on the websites API calls
- Designed a **Django Backend application** along with **Angular Frontend APIs** to communicate and log various user interactions such as clicks, selects, promo code entries amongst others
- Built a **Backend API** in python, to provide updated weather data for a weather **landing-page**

## Technical Projects

**Medical Image Computing** | **Course Project & Assignments** *(May 2021)*
*Guide: Professor Suyash Awate* | Computer Science & Engineering Department, IIT Bombay

- Engineered a four layer **Convolutional Neural Network** using Keras and Tensorflow
- Developed a model to identify metastatic tissue in histopathological scans of lymph node sections and achieved an accuracy of **94%** and **AUC-ROC** score of **0.97** on the validation set
- Implemented image **denoising, segmentation** and **shape analysis** algorithms to execute Programming Assignments based on concepts and techniques discussed in the course.

**Intelligent Agents** *(April-July 2020)*
*Guide: Seasons of Code mentor under Web and Coding Club, IIT Bombay*

- Was a part of a **4 member team** which implemented a virus spread using **Python libraries** like Scikit Learn, Matplotlib and seaborn and **techniques** like regression, K-Means and Neural-Networks
- Used the techniques learnt to implement a basic **Music Recommendation system** capable of **evolving over time** based on multi-user preferences and listening habits

**Tap Code Tone Generator** | **Course Project** *(April 2021)*
*Guides: Profs. S. Vijayakumaran & V. Rajbabu* | Electrical Engineering Department, IIT Bombay

- Programmed the **8051 Microcontroller** using **Embedded C** language to generate Tap Code Tones
- Made the tone generator interactive using a **UART Module** and demonstrated the working on different keyboard characters via **16x2 LCD Display** and a **speaker** as well

**Digital Logic Design in VHDL** | **Course Project** *(February-April 2021)*
*Guide: Professor Maryam Baghini* | Electrical Engineering Department, IIT Bombay

- Utilized **behavioural** modelling to design an **FSM** that plays a musical tune via a Krypton board
- Optimized combinational circuits and programmed their architectures using **structural VHDL**
- Verified designs by performing simulations on all inputs using **scan chains** on a TIVA-C board

**Autonomous Ball Collector** *(August 2020)*
*Guide: Innovation Cell, IIT Bombay*

- Learnt basics of **Python, OpenCV, ML, SolidWorks, ROS, and Gazebo** in a intensive program
- Worked in a **5 member team** and built a **fully functional autonomous robot** in Gazebo-ROS simulation software, which was capable of gathering green balls and simultaneously discarding red balls. Made use of **LIDAR, Camera and SONAR sensors** to perceive the simulated environment and performed the appropriate action, on the basis of **OpenCV and ML techniques**

**16-bit ALU | Course Project** *(December 2020)*
*Guide: Professor Virendra Singh* | Electrical Engineering Department, IIT Bombay

- Designed an **Arithmetic Logic Unit**, using **VHDL**, with the ability to XOR, NAND, add or subtract two 16-bit numbers to each other, depending upon user input choice
- Engineered a **Parallel Prefix Adder** by implementing the **Kogge Stone Architecture**

## Technical Skills

**Languages*** **In decreasing order of proficiency*
Python, C++, VHDL, Assembly, MATLAB, LaTeX, Embedded C
**Python Libraries**
OpenCV, numpy, matplotlib, pandas, tensorflow, keras, Scikit-learn
**Web Development**
HTML, CSS, Typescript, Bootstrap, Angular, Django, MongoDB, Postgresql

## Positions of Responsibility

**Department Academic Mentor | Department of Electrical Engineering** *(2021-2022)*

- 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-Curriculars

**Teaching Assistant | Department of Mathematics, IIT Bombay** *(November-December 2020)*
*MA 109 (Calculus I)*

- Responsible for conducting weekly tutorial sessions for a batch of 40+ freshmen, clearing conceptual doubts through personal interaction and helping them cope with their first online semester
- Assisted the Professors in planning course logistics and evaluated assignments taken by the students

**Teaching Assistant | Student Mentorship Program (SMP), IIT Bombay** *(August-December 2020)*
*English Language Improvement Training Program (ELIT)*

- Amongst 20 selected students entrusted with teaching **English grammar** and imparting soft skills
- Organising weekly sessions to teach Tenses to **300+ students** for facilitating speaking and writing

## Key Courses Taken

| | |
|---|---|
| **ML and Statistics** | Foundations of Intelligent and Learning Agents*, Medical Image Computing, Deep Learning Specialization†, Machine Learning by Stanford†, Probability and Random Processes, Markov Chains & Queueing Systems |
| **Computer Science** | Design and Analysis of Algorithm*, Data Structures and Algorithm, Logic for Computer Science, Computer Programming and Utilization |
| **Electrical Engineering** | Digital Systems#, Signal Processing, Microprocessors#, Comm. Systems* |
| **Mathematics** | Linear Algebra, Calculus, Complex Analysis, Partial Diff. Equations |

(*To be completed by Nov-'21, †Coursera, #Includes Corresponding Lab Course)

## Extracurriculars & Miscellaneous

- Successfully completed **80 hours** of training in **swimming** under the **NSO** programme *(2020)*
- Developed a **mobile controlled robotic car** in a team of four and successfully navigated a challenging **obstacle course** as part of the **XLR8** competition *(2019)*
- Awarded the **Gem of the Year** award in school, for proving to be a **symbol of excellence** *(2017)*
- Awarded as **best speaker** in the 1st school simulated Model United Nations Conference *(2016)*
- **Speaker** in the Frank Anthony Memorial All India Inter School **Debate Competition** *(2015)*

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