Shivam Kajale | **15D070009**
Electrical Engineering | **UG Third Year (Dual Degree)**
Indian Institute of Technology Bombay | **Male**
Specialization: Microelectronics | **DOB: 17/11/1997**

Examination	University	Institute	Year	CPI / %
Graduation	IIT Bombay	IIT Bombay	2018	9.03
Intermediate/+2	Maharashtra HSC	M. H. High School	2015	90.15
Matriculation	ICSE	Silver Oak Universal School	2013	94.40

Pursuing minor in **Computer Science and Engineering**.

Academic Achievements

- Secured **All India Rank 296** in **IIT JEE-Advanced** out of 150 thousand candidates *(2015)*
- Awarded **AP** grade for exceptionl performance in Computer Programming and Utilization course (CS101), under Prof. Uday Khedkar, CSE Department, IIT Bombay *(2016)*
- Selected among the top 300 in India for **Indian National Chemistry Olympiad** *(2015)*
- Secured **99.85 percentile** in **JEE-Mains** amongst 1.3 million candidates *(2015)*
- Awarded fellowship under **Kishore Vaigyanik Protsahan Yojana (KVYP)**, conducted by Department of Science and Technology, Government of India, with **All India Rank 191** *(2014)*
- Awarded scholarship under **National Talent Search Exam (NTSE)**, organised by GOI *(2011)*

Projects

3D Neural Probes Array | **Biomedical Microsystems, Course Project** *(Spring 2017)*

Course Instructor: Dr. Rohit Srivastava

- Designed a 3D array (3x3x2) of neural probes by folding 3 planar silicon islands connected by **flexible parylene cables**. An island hosts 3 shanks, having 2 electrodes and 1 microchannel outlet each.
- **Improved biocompatibility** by including a nona-peptide layer with polypyrrole and laminin to ensure quick repair of damaged neurons at piercing site. This improves neural density near electrodes.

Spin FET Technology | **Microelectronics, Course Project** *(Autumn, 2016)*

Course Instructor: Prof. Bhaskaran Muralidharan

- Reviewed research papers related to principles and development of Spin FET technology.
- **Compiled a report** based on the research, and presented a **seminar** to the fellow undergraduates.

ManiMouse | **Institute Technical Summer Project, IIT Bombay** *(Summer, 2016)*

- Developed a hand **gesture controlled mouse simulation** system. It has predefined gestures which are interpreted by the program as free movement, left/right click, drag, select or scroll up/down. Also provides left and right hand user compatibility
- Implemented image processing using **OpenCV** and implemented actions on cursor using **PyAutoGUI** package on Python environment

Edukit | **Interactive Course Design** *(Summer, 2017)*

Project Guide: Prof. Rajesh Zele

- Assisted Electrical Engineering faculty, Prof. Rajesh Zele, in developing an interactive Introduction of Electrical Engineering course to keep the new students interested in various aspects of the field.
- Developed a **gesture controlled bot** for student demonstration and designed an experiment on 24 hour LED clock to enhance hands-on learning during the course.
- Designed Arduino compatible hardware modules like **IR Sensor array and DC motor driver** for students' usage focusing on cost effectiveness and easy reproducibilty.

Pizza Maker's Scheduler | **Data Structures & Algorithms, Course Project** *(Spring, 2017)*
Course Instructor: Prof. Ganesh Ramakrishnan

- Developed an algorithm to suggest sequence of processing orders which minimises average waiting time for customers and implemented it on python.
- A priority factor is devised to prevent waiting time of customers from reaching 30 minutes as far as possible (in cases of 30 minute delivery guarantees). The priority factor and average waiting time compete to provide optimum service.

Skill Set

Technical Skills

Programming : C++, Python, Java, LaTeX, HTML, VHDL
Packages : Matlab, Spice, OpenCV, AutoCAD, Adobe Premiere Pro, Eagle

Key Courses Undertaken

Electrical Engineering	**Mathematics**	**Miscelleneous**
Microprocessors*	Linear Algebra	Data Structures and Algorithms
Electronics Devices & Circuits	Complex Analysis	Computer Networks
Data Analysis & Interpretation	Calculus	Computer Programming & Utility
Microelectronics	Differential Equations	Quantum Physics & Applications
CMOS Analog VLSI Design*		Biomedical Microsystems
Microelectronics		
Signals and Systems		

** To be completed by November '17*

Fields of Interest

Nanoelectronics, Biomedical Microsystems, Biomimetics, Computer Vision, Analytics, Spin Field Effect Transistors, Quantum Computing

Positions of Responsibility

General Secretary | **Electrical Engineering Students' Association, IIT Bombay** *(2017-18)*

- Organise events like freshmen orientation, quizzes, sports meets, valedictory function, etc.
- Address and solve academic and social grievances of students.
- As head of the council, coordinate the working of council members.

Teaching Assistant | **Computer Programming & Utility** *(Summer, 2016)*

- Served as a Teaching Assistant under **Padma Shri Prof. D. B. Phatak**
- Entrusted with a batch of 88 students for teaching and doubt clearing during lectures and lab sessions
- Active involvement in setting and evaluating assignments, lab works and exams.

Class Representative | **Electrical Engineering, 2015 batch** *(July 2015-Present)*

- Active role in scheduling lectures and labs during the semesters and conveying the opinions of peers effectively to professors and department council members
- Responsible in conducting site visits, talks by alumni, cultural events and other such activities

Extracurriculars

- Trained in playing Indian Classical music on instruments like Harmonium and Tabla *(2008-2013)*
- Took up **German** language course in middle school under **Common European Framework of Reference for Languages (CEFR)** *(2008-2011)*
- Selected for attending National Science Camp (VIJYOSHI), at **IISc, Bangalore** *(2014)*
- Attended nurturance camp at Homi Bhabha Centre for Science and Education **(HBSCE)**, organised for NTSE scholars *(2012)*
- Awarded **Yellow belt** in Karate with certification from **Indian Jitsu-Kan** *(2008)*