



Sahil Patil
Electrical Engineering
Indian Institute of Technology Bombay
Specialization: Control and Computing

24M1087
M.Tech.
Gender: Male
DOB: 07/05/2002

Examination	University	Institute	Year	CPI / % Credits
Post Graduation	IIT Bombay	IIT Bombay	2026	8.8 Core: 88 Total: 100
Graduation	Mumbai University	Vivekanand Education Society's Institute Of Technology	2023	8.87

Graduation Specialization: Electronics Engineering

PROJECTS & SEMINARS

- **Scalability and Economy in Contactless Biometric Systems** (*M.Tech Project* | *Prof. Vikram M. Gadre*) (*Jan'25-Present*)
 - Improved **fingerprint processing** using **mask-based core point detection** with **orientation smoothing**.
 - Enhanced **detection accuracy** and **consistency** via **orientation pattern analysis** and **rotation alignment**.
 - Developing a **contactless biometric attendance system** at SPIT College with **efficient authentication**.
- **Image Enhancement for Contactless Biometrics** (*M.Tech Seminar* | *Guide: Prof. Vikram M. Gadre*) (*Aug'24-Dec'24*)
 - Researched **contactless fingerprint recognition** via **smartphone imaging** using **Wavelet denoising** and **CLAHE**.
 - Applied **Gabor filters** and **Harris Corner Detection** for **feature extraction** and analyzed **noise**, quality, matching.
- **Facial Expression Recognition on FER-2013 Using CNN in PyTorch**
(*Institute Technical Council* | *Web & Coding Club* | *Seasons of Code*) (*Jun'25-July'25*)
 - Developed a **4-layer CNN** with **batch normalization** and **dropout** for **7-emotion classification** on **FER-2013**.
 - Achieved **63.33% test accuracy** with **Adam optimizer**, visualizing via **accuracy/loss curves** and **confusion matrix**.
- **Practical Near Neighbor Search via Group Testing** *Course Project (CS 754)* (*Jan'25-May'25*)
 - Implemented **FLINNG** with **group testing**, **LSH**, and **Bloom filters** for fast and efficient **YFCC100M** retrieval.
 - Achieved **1.25x faster**, more accurate image retrieval than brute force by improving **recall** and **precision**.

SCHOLASTIC ACHIEVEMENTS

- Achieved a **98.29 percentile** in **GATE ECE 2024** out of 63,000+ participants, a national-level entrance exam.
- Achieved a perfect **10.0/10.0 GPA** in **14 undergraduate courses**, demonstrating academic excellence.

TECHNICAL SKILLS

- **Programming & Scripting:** C, C++, Python, HTML5, Embedded C, SQL, MATLAB, Cuda
- **Tools & Platforms:** Simulink, LaTeX, Microchip Studio, Eagle, LTspice, Arduino IDE, Cadence, Git/GitHub
- **Libraries & Frameworks:** NumPy, Pandas, PyTorch, TensorFlow, OpenCV, Matplotlib, Seaborn, scikit-learn.

RELEVANT COURSES

Control Systems:	Control and Computing Laboratory, Multi-Variable Control Systems, Non-Linear Dynamical Control Systems, Optimal Control Systems
Signal Processing & Machine Learning:	Statistical Signal Analysis, Digital Signal Processing, Advanced Image Processing, Foundations of Machine Learning, Nonlinear and Adaptive Data Analysis Techniques, Neural Networks and Fuzzy Logic
Mathematics & Optimization:	Applied Linear Algebra, Matrix Computations, First Course in Optimization

POSITION OF RESPONSIBILITY

- **Public Relations Convener, PG Cultural Council, IIT Bombay** (*Jun'25-Present*)
 - Led and coordinated a **10-member team** to manage **cultural initiatives**, planning and executing diverse events.
 - Directed **publicity campaigns**, **community outreach**, and **audience engagement** to maximize participation.
- **Core Team Member, YOGASTHA, IIT Bombay** (*Mar'25-Present*)
 - Coordinated **International Yoga Day** celebrations, managing **logistics** for smooth campus execution.
 - Facilitated active engagement of **200+ participants** through curated sessions and interactive activities.
- **Student Companion, IIT Bombay** (*Jun'25-Present*)
 - Part of a **330-member multidisciplinary team** selected through comprehensive interviews and evaluations.
 - Mentoring **6 freshers** in academics, social engagement, and extracurricular activities, ensuring holistic well-being.
- **Teaching Assistant, EE324: Control Systems Laboratory** (*Aug'24-Dec'24, Aug'25-Present*)
 - Supervised and guided students during practical, hands-on control system experiments and simulations.
 - Evaluated and provided feedback on lab reports, conducted viva, ensuring clarity in technical documentation.

EXTRA-CURRICULARS and INTRESTS

- Achieved a **personal best milestone** by successfully completing the **Brookfield Powai 10 km Run** in **under 80 minutes**.
- Conducted a **3-day workshop on Cadence** training **20+ students** with hands-on sessions and practical exposure.
- **Trekking and Outdoor Exploration:** Completed treks to Harishchandragad, Raigad, and several other notable forts.
- Actively enjoy **volleyball**, working with teammates on strategy, teamwork, and celebrating collective successes.
- Passionate about **cricket**, closely following professional leagues, major tournaments, and developments in the sport.
- Enthusiastic about **PUBG** and online gaming, staying engaged with strategy and competitive play.