



**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 TestingCourse 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 INTERESTS

- 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.