

# Ankush

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## Education

**Indian Institute of Technology Bombay**, Mumbai, India

Jul '17 – May '21

- Bachelor of Technology (B.Tech) in Engineering Physics with a Minor in Electrical Engineering

## Technical Skills

Python, R, TensorFlow, Verilog/ System Verilog, Verilog AMS, VHDL, Cadence , PSpice, Jupyter, Arduino IDE, MATLAB,  $\LaTeX$

## Honors and Awards

- Two times recipient of prestigious **Texas Instruments Global Recognition** for Outstanding Contributions
- Awarded **Merit-based scholarship** in high school and for all four years of my undergraduate studies based on academic performance
- Achieved **All India Rank 912** in JEE Advanced 2017 and **All India Rank 1957** in JEE mains 2017 out of **1.2 Million** students

## Research and Technical Projects

### ML Driven PSpice Modeling

Sep '22 – Present

*Filed 1 patent at the US-PTO and presented at TI Technical Leadership Conference, Texas*

- Designed an **automation suite** to efficiently generate **quick** and **precise top behavioral PSpice models** for analog devices
- Implemented a **hierarchical ML real number driven approach** incorporating insights from internal blocks and transient delays
- Pioneered the upload of **ML-based PSpice model** for the TI product **TPS25961 (eFuse)** on the official TI website (ti.com)
- Shared PSpice model for **TPS1213-Q1 (High-side driver)** with **Bosch and Milwaukee tooling** to have early customer feedback

### Mars Rover Project IIT-B | University Rover Competition (URC 2019)

Sep '18 – Aug '21

*Electronics Subdivision Head, leading a team of 15 members and build an all-terrain rover prototype*

- Conceived and executed complete electronics subsystems, spanning **logic units (RPI, NUC)**, and hardware components
- Enhanced robotic arm control by integrating **potentiometer feedback from actuators** and real-time point cloud data from the on-board **RealSense D435** depth camera, seamlessly interfacing with a Virtual **URDF arm model** for enhanced intuitiveness
- Contributed to **robotic arm automation** with **Inverse kinematics (IK) algorithms** and **stereo vision depth camera** integration

### Semiconductor Research Corporation

Dec '21 – Present

*SRC is a non-profit research consortium that serves as a crossroads of collaboration between technology companies and academia*

- [SRC 3160.005] **Leading technical liaison** and TI coordinator for SRC academia-industry project with **Prof. Abhijit Chatterjee** from Georgia Institute of Technology on **"ML-Assisted Scalable DFT and BIST of AMS Systems"**
- [SRC 2982.001] Technical liaison from TI for the SRC funded industry-academia project on **"Machine Learning Assisted Verification Methodology for Analog & Mixed Signal Circuits"** with Anna University Team

## Professional Experience

### Texas Instruments | Bengaluru, India

Jun '21 – Present

*Mixed Signal Design Verification Lead, Analog Power Products Department*

- Led pre-silicon analog design verification effort of **four power path protection** projects deployed in **industrial, automotive and enterprise segments** to successful tape-out with a track record of zero 'simulatable' bugs in silicon
- Developed and meticulously managed comprehensive parametric, system and manufacturing test plans & verification environments for **Analog Power Products**, ensuring rigorous testing and quality assurance
- Enhanced **SoC test and verification plans** by collaboratively optimizing coverage at both block and system levels through close coordination with cross-functional teams like Design, Systems, and Test teams
- Deployed **machine learning for automated waveform review in Design Verification** in multiple analog centric chips thereby eliminating manual review process and reducing cycle time by several weeks
- Developed and validated multiple digital averaging filter algorithms, achieving a **shared modified FIR algorithm** with superior outcomes in area, error, frequency, and stability needed for the **PMBUS digital telemetry** circuit of **TPS25990 (eFuse)**

### CataConn | Startup

Oct '20 – Jun '21

*Founder, Guided by Prof. Aparna Rao, IITB*

- Managed **100+** teaching hours, led a team of **10+** tutors, and guided **500+** students in personalized **1-on-1** IIT-JEE coaching
- Created a ML-driven tutor search platform, optimized SEO techniques, and achieved **300K+** site impressions in 5 months

## Extracurricular/ Volunteer Work

- Coordinated and managed events like science and technical competitions, as Techfest-IITB's **Media and Publicity Coordinator**
- Conducted a **"Getting Started on ML"** session for TI DFT, Test, and FuSa engineers
- Volunteered for **Back to School Campaign** assisting 20,000 students, and **Sapling Plantation Drive** planting 1,000 trees