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