MAJOR PROJECT & SEMINAR

- **An efficient channel estimation scheme in TDD MIMO Systems**
  Guide: *Prof. Kumar Appaiah, Electrical Engineering, IIT Bombay* (*May19 - Present*)
  - Implemented Multi Cell **MMSE based MIMO** precoding in multiple antenna systems which used non-orthogonal pilots for channel estimation.
  - Implemented **covariance** based channel estimation which uses Bayesian Estimation and analysed its performance based on rate vs antennas.Implemented **Kalman** filter to estimate channel in **MIMO** system.
  - Design of **efficient precoding** scheme using channel state information available using **feedback** and channel tracking which reduces the effect of **pilot contamination** on channel estimation.
- **Inter cell interference in Multi Cell MIMO systems [M.Tech Seminar]** (*Jul'18 - Nov'18*)
  Guide: *Prof. Kumar Appaiah, Electrical Engineering, IIT Bombay*
  - Studied the structure and working of **MIMO systems** and impact on BER on using Non-orthogonal pilots.
  - Simulated **BER vs SNR** for MIMO systems in Interference and Interference-ree scenarios.

WORK EXPERIENCE & NON ACADEMIC PROJECT

- **Interview Management Software | Electrical Engineering Department, IITB** (*Feb'18 - present*)
  Lead role in building online system that made **automatic coordination** across interview committees. This system was successfully used in the last **3** admission sessions.
- **Systems Engineer | Infosys Technology Ltd** (*Dec'15 - Jul'17*)
  Work included writing code to fetch data to the module and to develop features using Oracle ERM tool.

KEY COURSE PROJECTS

- **Scheduling in 4G LTE** (*Jan'18 - Apr'18*)
  Guide: *Prof. Abhay Karandikar, Electrical Engineering, IIT Bombay*
  - Implemented **channel aware scheduling** schemes such as **MT, PF, TTA**.
  - Compared all schemes based on **cell throughput, average user throughput, Jain fairness index**.
- **Simulation of Cellular System in OCTAVE** (*Jan'18 - Apr'18*)
  Guide: *Prof. Abhay Karandikar, Electrical Engineering, IIT Bombay*
  - Computed **SIR**, **blocking probability** for different cluster sizes and **sectoring**.
  - Analyzed **handover** process and **ping-pong** rate for different user mobilities and hysteresis values.
  - Analyzed BER performance for **space** and **time diversity** in a slow flat fading Rayleigh channel.
  - Analyzed BER performance for a single-cell and multi-cell scenario in a **CDMA** cellular system.

OTHER COURSE PROJECTS

- Spam URL classification using Machine Learning | *Course: Network Security* (*Jan'19 - Apr'19*)
- Image Dehazing using CAP and DCP |*Course: Image Processing* (*Jul18 - Nov18*)
- Basic Image Editor tool in Python | *Course: Image Processing* (*Jul'18 - Nov'18*)
- Wavelet based leaders and P-leaders in Multi Fractal Analysis | *Course: Wavelets* (*Jul'18 - Nov'18*)

TECHNICAL SKILLS

Languages : C, C++, Python, HTML, PHP, JQuery, Bash scripting.
Tools : MATLAB, LaTeX, Git.

POSITIONS OF RESPONSIBILITY

- **Research Assistant:** System Administrator Laboratory, IIT Bombay (*Jul'17 - Present*)
  - Building and maintaining the website of EE department, maintaining TA feedback and allotment portals.
  - Designed online portals and coordinated for the **automation** of the activities in department admission process.
- **Web Nominee:** Post Graduate Academic Council, IIT Bombay (*Jul'18 - Jun'19*)
  - Designed new web portal for PGAC which is used by all the Post Graduate students of the institute.
- **Mess Secretary:** Hostel-1, IIT Bombay (*Sep'17 - Mar'18*)
  - Managed all mess activities which catered for **250+** students with an budget of **≈8,00,000/-** per month.

CO-CURRICULAR ACTIVITIES

- Completed **Machine Learning** course by **Andrew Ng** from Coursera. (*2019*)
- Conducted an introductory session on **Linux, vim and Git** as a part of Bridge Course. (*2019*)
- Completed a 100 hrs course on the **Chinese** language conducted by IR office, IIT Bombay. (*2019*)
- Completed a short term course on **Digital System Design** organised by **C-DAC,** Hyderabad. (*2015*)
- Completed basic course in the **French** language from Vivekananda Institute of Languages, Hyderabad. (*2012*)