PROFFESSIONAL EXPERIENCE

- **Edelweiss Securities Limited** | Trading Technology Team *(May'18-July'18)*
  - Designed **UX** and **UI** for easy access to **Transaction Cost Analysis (TCA)** report to help traders get actionable **insights** to enhance **trading** related **execution quality**, compliance and management reporting capabilities.
  - Implemented **login authorization** and **dynamic forms** to query single day and multiple day TCA reports based on date, account ID, portfolio and instrument with **download** link to summary file on **Django framework**
  - Constructed infrastructure for **logging errors**, warnings and regular django server info for future **debugging**

RESEARCH EXPERIENCE AND SURVEY

- **Data Driven Techniques to predict Performance Loss of PV Plants** | Masters' Thesis
  Guide: Prof. Narendra Shiradkar, EE dept. IIT Bombay *(Jul'19-Present)*
  - Developing **data driven techniques** for predicting the degradation rates & future revenues of solar PV plants
  - Building **predictive analytics** tools capable of handling **big data** for extracting the **performance degradation** rate (with confidence bounds) of solar PV plants from time series data of current-voltage(I-V) measurements.
  - Implemented a **five parameter single diode model** for PV modules in Python that can predict the PV module power at **any irradiance and temperature** by extracting the parameters from the module datasheet
  - Utilizded Bokeh server to plot the I-V curve (with interactive sliders) by numerically solving the diode equation
- **PV Module Field survey in Leh** | NCPRE, IIT Bombay *(Jan'19-May'19)*
  - Collaborated with 2 others in survey of 7 days to inspect solar plant installations and performance degradation
  - Surveyed 88 modules at 3 sites in Laddakh region and carried out module and string level I-V characterization, IR thermography for hotspot detection and visual imaging to capture cracks and pyhsical damages of the cells
  - Calculated average performance degradation rate per year to be 1.42%, 3.32% and 3.97% using MATLAB

MAJOR PROJECTS

- **Solar module mounting orientation** | Course: Design and eval. of PV power plants *(Mar'19-May'19)*
  - Determined the best possible orientation of solar panel for maximum power output in different regions.
  - Performed parametric analysis on System Advisor Model software by varying tilt and azimuthal angle
  - Concluded that optimal tilt angle is latitude angle and optimal azimuth is 180 in north and 0 in south
- **Portable Solar cum Vibration Energy Harvesting Phone Charger** | Design Lab *(Jan'18-Apr'18)*
  - Prototyped and tested working model of solar cum vibration charger with optimized size and performance
  - Designed a suitable AC-DC converter and a DC-DC Boost converter for vibration and solar circuit output
- **Power Amplifier design** | Course: Solid State Microwave devices *(Mar'19-May'19)*
  - Simulated a 2 stage power amplifier with matching & bias-T circuits with unilateral design approach in ADS
  - Designed, fabricated & tested the PCB using Vector Network Analyzer for gain and bandwidth specifications
- **Maze Solver** | Summer School of Code, WnCC IIT Bombay *(May'16-Jul'16)*
  - Implemented command line Image Processing Project on Python platform assisted by OpenCV library
  - Used thresholding, filters, contour extraction, and thinning (one pixel width) to get a path from start to end.

POSITIONS OF RESPONSIBILITY

- **Teaching Assistant** | Course: Reliability and Failure Analysis *(Jul'19-Present)*
  - Developing an online portal for students using interactive Python library Bokeh & Jupyter notebooks that would provide them personalized random failure data of devices (Virtual Lab) for their course project.
  - Generated artificial random data for normal, weibull, lognormal distributions for modeling & simulation.
- **Campaigning Coordinator** | Abhuydaya, Social Body IIT Bombay *(2016)*
  - Led volunteer weekends at schools for the underprivileged to instil computer basics and career counselling
  - Co-ordinated and volunteered ANTARCHAKSHU, St. Xavier's XRCVC's initiative with a motive to demand from the government and people equal accessibility to science education for visually challenged people.

TECHNICAL SKILLS

- Programming Languages : Python (Pandas, numpy), C++, VHDL
- Tools : MATLAB, SAM, Cadence Virtuoso, Quartus, ADS, Bokeh, Django, OpenCV

EXTRA CURRICULAR ACTIVITIES

- Bestowed with a Black belt (1st Dan) in Shotokan style Karate after regular training of 4 years *(2009)*
- Member of Gold medal recieving squad in Badminton General Championship among 12 hostels *(2018)*
- Awarded silver medal in the Street Play competition, Freshiezza (Freshmen cultural competitions) *(2015)*
- Pursuing 50 hours official German language course provided by International Relation Cell, IIT Bombay *(2019)*