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 report 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 | Master's 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 module power at **any irradiance and temperature** by extracting the parameters from the module datasheet
  - Utilized 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** *(Jun'19)*
  - Inspected solar plant installations and carried out survey on their performance degradation in Leh, J&K
  - Surveyed **88 modules at 3 sites in Ladakh** region and carried out module and string level **I-V characterization**, IR thermography for **hotspot** detection and visual imaging to capture **cracks** and physical damages of the cells
  - Calculated the average performance degradation rate per year for the modules to be **1.42%, 3.32% and 3.97%**

MAJOR PROJECTS

- **Solar Module Mounting Orientation** | *Course: Design and Evaluation 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 efficiency
  - 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* *(Jun'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 using interactive Python library **Bokeh & Jupyter notebooks** that would provide the students **personalized random failure data** of various distributions for their course project **(Virtual Lab)**
  - Generated **artificial** random data of **Normal, Weibull and Lognormal** distributions for modeling & simulation

- **Campaigning Coordinator| Abhuyday, 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, C++, VHDL, Assembly
Tools & Libraries	MATLAB, R, Cadence Virtuoso, Quartus, ADS, Bokeh, Django, PVLib, Pandas, Numpy

EXTRA CURRICULAR ACTIVITIES

- Bestowed with a **Black belt (1st Dan)** at an age of 12 in Shotokan Karate after regular training of **4 years** *(2009)*
- Recieved **Gold medal in Badminton** inter hostel General Championship (among 11 teams), IIT Bombay *(2018)*
- Awarded **Silver medal for Street Play** "Mann ki Bhadas" in Freshmen cultural competition, IIT Bombay *(2015)*
- Pursuing 50-hour official **German language course** provided by International Relation Cell, IIT Bombay *(2019)*