

PROFESSIONAL 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** (Jul'19-Present)
Guide: Prof. Narendra Shiradkar, EE Dept. IIT Bombay
 - 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** (Jan'19-May'19)
 - Inspected solar plant installations and carried out survey on their performance degradation in Leh
 - 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 average performance degradation rate per year 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** (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 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, PVLlib, 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)
- Received **Gold medal in Badminton** inter hostel General Championship (11 participants) in IIT Bombay (2018)
- Awarded **Silver medal for Street Play Mann ki Bhadas** in Freshmen cultural competitions, IIT Bombay (2015)
- Pursuing 50 hours official **German language course** provided by International Relation Cell, IIT Bombay (2019)