Nidhal Hafeez | **Roll No.**
Department of Energy Science and Engineering | **M.Tech.**
Indian Institute of Technology Bombay | **Gender**
Specialization: Energy Systems Engineering | **DOB**

Examination	University	Institute	Year	CPI/%
Master of Technology	IIT Bombay	Indian Institute of Technology Bombay	2021	8.93
Undergraduate Specialization : B.Tech., Mechanical Engineering				
Graduation	NIT Calicut	National Institute of Technology Calicut	2017	7.91

Professional Experience

- **Junior Mechanical Engineer, Wasl, Dubai.** [Jan '18 - Apr '19]
  - MEP services site engineer of Wasl B+G+3 residential development in Muhaisnah, Al Qusais.
  - Developed shop drawings of services and guided the contractors to execution, testing and commissioning
  - Ensured on-site compliance with engineering codes like IPC, ASHRAE Standards and SMACNA Standards
  - Arranged stage wise inspections obtaining approvals from competent authority

- **Intern, Arthimpact Finserve Pvt. Ltd., Mumbai.** [Mar '20 - Jun '20]
  - Worked on "Classification of KYC documents and OCR extraction" project
  - Received Letter of Appreciation for demonstrating good design skills along with self-motivation and promptness in achieving goals

Key Projects

- **Techno-economic analysis of grid integrated PV-Battery system**
  (M.Tech. Thesis | Guide: Prof. Dayadeep Monder, IIT Bombay) [Jul '20 - present]
  - Propose battery storage for existing grid integrated PV system in Cochin International Airport Limited
  - Battery sizing with the objectives of increasing self-sufficiency rate and revenue under varying PPA costs
  - Determine and compare the economic viability of PV and PV battery system under various scenarios of incentivising, technology costs, electricity cost and carbon price
  - Modelling and simulation using **MATLAB Simulink** and **TRNSYS**
  - Results of simulation on **SAM** showed better IRR and LCOE for PV system over PV Battery system

- **Medicine packaging transliteration from English to Hindi** — Mentored Project
  (Guide : Zaher Abdul Azeez, Sr. Data Scientist, NoBroker.com) [Jun '20 - Aug '20]
  - Trained **YOLOv4** model using transfer learning for image text region localisation with mAP of 74%
  - Extracted text from images using Pytesseract wrapper for Google's Tesseract OCR engine
  - Developed and trained by teacher forcing an **encoder-decoder model** with attention using **GRUs** for transliteration with 84% accuracy

- **Classification of KYC documents and OCR extraction**
  (Intership project with Arthimpact Finserve Pvt. Ltd., Mumbai) [Mar '20 - Jun '20]
  - Localised and classified image regions for OCR
  - Labelled images using VoTT annotation tool and converted to YOLOv3 format
  - Trained model with **YOLOv3** for object detection and classification on the ID images with 99% mAP
  - Extracted text using **PyTesseract** wrapper for Google's Tesseract-OCR engine

- **Outbreak prediction of COVID 19** — Course Project
  (Course: Geospatial Predictive Modelling* | Guide: Prof. Alok Porwal, IIT Bombay) [Aug '20 - present]
  - Data analysis and comparison of the trend of Covid19 spread in different states of India and other countries
  - Data visualisation of the trends of deaths and total cases on geographical map using **Folium** and **Seaborn**
  - Forecasted the number of cases for various regions using Facebook's **Prophet**

- **Power generation and load demand forecast for grid connected PV Battery system** — Course Project
  (Course: Renewable Energy Integration* | Guide: Prof. Zakir Rather, IIT Bombay) [Aug '20 - present]
  - Reviewed the literature on different methods of load demand and power generation forecasting
  - Implemented **neural network** based regression technique for a day-ahead generation and demand prediction

- **IIT Bombay - A step towards Green Campus** — Course Project
  (Course: Energy Resources, Economics and Environment | Guide: Prof. Rangan, IIT Bombay) [Jul '19 - Nov '19]
  - Determined the baseline energy consumption, analysed the technological options and proposed an action plan
  - 5% increase in the share of renewable energy was achieved through proposed measures
  - 7.32 Rs/kg and 6 Rs/kWh of average Cost of Saved Carbon and Cost of Saved Energy respectively for a 20% discount rate was obtained

- **Roadmap to India's transition to Electric Vehicles** — Course Project
  (Course: Energy Policy Analysis | Guide : Prof. Rangan Banergee, IIT Bombay) [Jan '20 - Jun '20]
  - Carried out an extensive literature survey and analysed the existing EV policies in 11 countries
  - Identified 20+ barriers to EV 30@30 scenario in India
  - Suggested policy reforms and instruments to overcome the barriers. Analysed the impact of Covid19 on EV sales globally.

- **Construction of Sustainability Balanced Scorecard Framework using decision modelling**
  (B.Tech. Project | Guide : Prof. R. Sridharan, NIT Calicut) [Aug '16 - May '17]
  - Developed a framework to help organisations in better inclusion of sustainable aspects in its supply chain and within the organisation domain
  - Used various Multi-Criteria Decision Making techniques to identify KPIs under 4 performance perspectives for Peekay Steels Ltd., Calicut
  - 24 KPIs were chosen and incorporated into the SBSC framework which was forwarded to the firm for monitoring during the fiscal quarter

- **All-Terrain Vehicle, BAJA SAEINDIA 2016**
  (Guide: Prof. V. Sajith and Prof. Shijo Thomas, NIT Calicut) [Feb '15 - Feb '16]
  - Part of Team Unwired that designed, fabricated and validated a single seater four - wheeled ATV representing NIT Calicut
  - Designed the steering system on SOLIDWORKS and Lotus SHARK

- **Employee attrition prediction,** Kaggle Contest — Course Assignment
  (Course: Introduction to Machine Learning | Guide : Prof. Amit Sethi) [Mar '20]
  - Data processing using **Pandas** and **Scikit-learn**. Prediction accuracy of 89% achieved using **Logistic Regression** classifier compared to **Perceptron** and **Random Forrest** classifier

Certifications

- **Deep Learning - Onefourthlabs**
  (Instructors : Prof. Mitesh Khapra and Prof. Pratyush Kumar, IIT Madras) [Jun '20]
  - Key learning include FNN, CNN architectures, optimisation algorithms and sequence models on **PyTorch**
- **Foundations of Data Science - Onefourthlabs**
  (Instructors : Prof. Mitesh Khapra and Prof. Pratyush Kumar, IIT Madras) [Ongoing]
  - Key learning include descriptive and inferential statistics, probability theory and hypothesis testing
- **SQL for Data Science - Coursera**
  (Offered by University of California, Davis) [Aug '20]
- **Data Wrangling, Analysis and AB Testing with SQL - Coursera**
  (Offered by University of California, Davis) [Ongoing]
- **Exploratory Data Analysis with Python and Pandas**
  (Coursera Project Network) [Aug '20]

Positions of Responsibility

- **Associate Placement Coordinator - Placement Office, IIT Bombay** [Sep '19 - Dec '19]
  - Led 100+ coordinators in a group of 14 overseeing the execution of 6000+ interviews in 16 days
  - Streamlined the scheduling, organisation and execution of 100+ company tests in a team of 2
  - Organised various placement related activities like Career Fair, resume verification, assessments and PPTs for 1600+ students

- **Company Coordinator - Placement Office, IIT Bombay** [Jul '20 - present]
  - Working in team of 48 members to contact and coordinate with the companies for recruitment of 1600+ students
  - Identified 60+ potential recruiters and contacted them for campus placements from India and abroad

**Audit*