

Andhra Maha Vishnu Kakumani

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EDUCATION

MSc. Global Air Pollution & Health: Management & Science

King's College London, London, UK

09/2017 - 09/2019

Pass with Merit

- Dissertation: Temporal analysis of non-exhaust emissions from road traffic in London and Swansea based on the heavy metals data using Data wrangling tools, Mann-Whitney test, Deming regression plots and Theil-Sen estimator [dplyr, openair, ggplot2, tidyr, mcr, plotly - R]
- Designed a measurement programme to assess air pollution changes from the transformation of Waterloo roundabout to horseshoe junction based on the London Atmospheric Emissions Inventory data and the air quality legislations using Leopold matrix method [QGIS, R packages]
- Delivered a lecture on India's air pollution control systems including source apportionment, chemical transport modelling, air quality legislation, sensor technology and CPCB Sameer app
- Analysed spatio-temporal air pollution exposure data for all the routes between home and school in London and found that the quietest cycling route was the most beneficial in terms of health, safety & time using dynamic exposure modelling [QGIS, CycleStreets API, R packages]
- Examined AQI based responsive measures for National Capital Region, India and concluded that the Badarpur thermal power station (SO₂) must be closed in summer instead of winter based on the evidence of significantly higher secondary particulate (PM) formation [MS Office]
- Outlined the epidemiological and toxicological evidence including carcinogenicity classification by IARC in 2013 for reducing the current particulate matter air quality guidelines of WHO (2005)

BTech. Civil Engineering (Minor: Economics)

Indian Institute of Technology Madras, Chennai, India

08/2010 - 07/2014

First Class

- Thesis: Applied principal component regression analysis to the urban air quality, city road traffic and meteorological data for forecasting the next day's PM₁₀ concentrations [SPSS, MS Office]
- Estimated the fuel consumption and CO₂ emissions in Greater London based on mode share, passenger kilometers, emission rates and the energy efficiency of land passenger modes data
- Courses: Urban Transport & Environment, Models of Water & Air Quality, Financial Economics
- Secured a National Rank of 1708 in IIT-JEE (2010) out of 500,000 candidates (99.7 percentile)

Coursera. The Deep Learning Specialization

deeplearning.ai, California, USA

05/2019 - 11/2019

100%

- Completed the 5-course artificial intelligence specialization which broadly covers deep neural networks, structuring ML projects, RNN, CNN and sequence models [Python and TensorFlow]
- Developed a profound knowledge of the best AI algorithms and mastered deep learning from foundations (neural nets) to applications like Computer Vision, NLP, Speech Recognition, etc.

AWARDS AND ACHIEVEMENTS

- 1/9 of 400+, prize-winner of the King's most prestigious *Principal's Global Leadership Award*
- 1/5 of 100+, secured the King's India Master's Scholarship of GBP 5000 towards college tuition
- 1/9 of 50+, received the Student Opportunity Fund for participating in The Royal Society event
- 1/7 of 50+, won the best technical presentation award on pollution mitigation from NPL (India)
- 1/8 of 90+, received full financial aid on Coursera for air quality data science e-learning courses

TECHNICAL SKILLS

Programming languages: R (advanced), Python (intermediate), SQL (intermediate) and Git (familiar)

Tools/Packages: MS Office, QGIS, RStudio, ADMS, CMAQ, GAINS, SPSS, STAAD.Pro – advanced

Operations: Workshops, Surveys, Digital Media, Mobile Apps, Consultations, Webinars, Conferences

LANGUAGE PROFICIENCY

- English (Professional working), Hindi (Professional working) and Telugu (Native or bilingual)

WORK EXPERIENCE

Trainee Engineer, QCI-NABET Air Quality Functional Area Associate

05/2016 - 08/2017

Aarvee Associates, Hyderabad

- Lead member for preparing the EA&EMP report of Priority Roads at Amaravati Capital City as per the World Bank guidelines – OP 4.01, OP 4.04, OP 4.36, OP 4.37, OP 4.12, OP 7.60, etc.
- Prepared EA&EMP reports for metro rail and national highway projects while delivering the expectations of stakeholders like clients, funding agencies (KfW, GoI), management and public
- Coordinated baseline assessment studies, estimated the impact on air quality and prepared several air quality management plans for infrastructure master plan and detailed project reports
- Developed air quality index and designed an interactive AQI map for Strategic Environmental Assessment of Amaravati Capital Region (8386.09 km²) in Andhra Pradesh, India – £2million
- Delivered a technical talk in front of 200+ people on data-driven sustainable solutions for road dust control at the environmental conference organised by National Physical Laboratory, India
- Generated £4m for the firm by automating analyses of complex regulatory environmental data of heavy civil infrastructure projects like Nagpur Metro and National Highways using Excel VBA
- Developed technical bid documents alongside the Business Development team for Kakinada Smart City Project, scored highest points (85/100) and bagged the firm's 1st Smart City Project

Intern, Water & Effluent Treatment

05/2013 - 07/2013

Larsen & Toubro Construction, Headquarters, Chennai

- Designed an overhead water tank better known as Intze tank using STAAD.Pro and IS codes
- 1/3 of 90+, secured 'S' (10/10) grade for accurate structural design and robust technical report

Intern, Small Enterprise Finance Centre

11/2012 - 01/2013

Institute for Financial Management and Research, Chennai

- Developed a cooperative business model using cost-volume-profit analysis to transform the local villagers within an integrated business city, M/s Sri City, into self-sustainable communities
- The model was successfully implemented in a cluster of 3 villages (4000 families) and enabled 50+ villagers to start their own scalable businesses while creating 40 logistics jobs in 6 months

POSITIONS OF RESPONSIBILITY

Student Ambassador, Faculty of Life Sciences and Medicine

10/2017 - 10/2019

Faculty Marketing Team, King's College London

Part-time

- Promoted and enhanced the reputation of King's using social media and online marketing tools
- Contributed to 5 articles on funding opportunities for the benefit of prospective faculty students
- Supported the marketing team in organising 3 admission events for postgraduate programmes

Lead Volunteer

08/2014 - 01/2015

Indian Institute of Technology Madras

- Member of IITM air quality group and organised a training programme on 'Air Quality Modelling'
- Assisted Prof. Shiva Nagendra in creating course materials and teaching CALINEpro tutorials

General Secretary

04/2012 - 05/2013

Mandakini Hostel, Indian Institute of Technology Madras

- Elected by a 300+ strong electorate and represented the dorm at the Students Affairs Council
- Organisation skills: coordinated a team of 10 including council members and succeeded in the annual inter-dorm sports (5th), technical (2nd) and cultural (7th) competitions against 19 dorms

EXTRA CURRICULARS

- Member of the MRC Centre for Environment and Health, Imperial College London
- Institute Hockey 'B' Team, Indian Institute of Technology Madras for two consecutive years

INTERESTS

- Travelling, Air Quality Management, Artificial Intelligence, Harvard Business Review, Avifauna