Vishnu Jayan

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Expert in data analysis, qualitative and quantitative research, GIS

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Degree	University	Specialization	Year
M.Tech	Indian Institute of Technology Bombay	Technology Development	2019-22
B.Tech	University of Kerala	Computer Science & Engineering	2010-14

EXPERIENCE

- **Software Engineer Consultant**, Stabilix (P) Ltd, Trivandrum *(Jan'24 -)*
- **Project Software Engineer**, IIT Bombay, Mumbai *(Apr'23 - Oct'23*
- **Software Engineer**, Uplers, Mumbai *(Aug'22-Feb'23)*
- **Software Engineer**, Indian Institute of Technology Bombay, Mumbai *(Jul'18-Jul'19)*
- **Senior Software Engineer**, Travancore Analytics (P) Ltd., Thiruvananthapuram *(Sep'17-Jul'18)*
- **Software Engineer**, PITSolutions (P) Ltd., Thiruvananthapuram *(Apr'15-Sep'17)*

MAJOR RESEARCH WORKS

- **Evaluation of TPDS in Palghar District, Maharashtra**
  *(M.Tech Project | Guide: **Prof. Bakul Rao**)* *(Nov'21-Apr'22)*
  - A study was conducted to evaluate the performance of the Targeted Public Distribution System in Palghar, Maharashtra, using the Composite Index method by primary and secondary data collection and literature survey.
  - Composite index is created by considering 12 variables covering four dimensions of working of FPS, such as **Food distribution**, **Infrastructure**, **Technology** and **Monitoring**
  - Composite index helped to compare and rank the performance of TPDS of 8 sub-districts of Palghar.
- **Analysis of Food Security and TPDS in Maharashtra**
  *(M.Tech Project | Guide: **Prof. Bakul Rao**)* *(Jul'21-Dec'21)*
  - A detailed study was conducted to understand the term 'Food Security' and its four major dimensions through a literature review and secondary data collection from trustful resources.
  - A literature study was performed to find the history, evolution and working, including procurement, transportation, storage and distribution of food grains through the Targeted Public Distribution System in Maharashtra.
  - Through the literature, articulated the importance of TPDS to ensure food security in Maharashtra and India.
  - Identified the system's issues and studied how technology can be used to evaluate the performance of TPDS.
- **Doubling Farmers Income, past trends, scope and possibilities**
  *(M.Tech Seminar | Guide: **Prof. Bakul Rao**)* *(Jan'20-May'20)*
  - Reviewed the contribution to Indian GDP and issues faced by the agriculture sector since the 1920s.
  - Analysed the Doubling Farmers' Income policy, its implementation and the outcomes in the current context.

OTHER PROJECTS

- **Energy modelling for irrigation in rural Maharashtra** (Project Team Member) *(Apr'23-Oct'23*
  - Helping to modify the model to find the energy required for irrigation based on area under irrigation and depth of irrigation for different crops.
  - Creating an Android application to collect the data from the farmers.
- **Identification of micro-level disaster vulnerability at village level in Kutanad, Kerala** *(Academic)* *(Apr'22-Jun'22)*
  - Identified the locations of bund breaches in Kuttanad using GIS, survey and FGD with farmers.
  - Analysed literature to determine different variables affecting the bund breaches in the Kuttanad region.
  - Calculated the correlation between variables and bund breaches in Kuttanad by collecting data using field visits and analysing using Excel and QGIS.

- **Analysis and preparation of village report of Pulincunnu, Kerala** *(Academic)* *(Apr'22-Jun'22)*
  - Performed transit walks through Pulincunnu Village, a part of Kuttanad, Kerala, FDGs with farmers, women, students etc. and PRA activities.
  - Conducted surveys using ODK and analysed different social aspects of the village such as health care, agriculture, demography, transportation etc. and created a report.
- **Project on Promotion of Bamboo Based Livelihoods in Rural Areas**, *(Academic)* *(Jul'21-Nov'21)*
  - Analysed the current scenarios of bamboo-based livelihood and created a DPR for the bamboo-based livelihood enhancement scheme in Madhya Pradesh using SWOT, fishbone diagram, stakeholder analysis, and cost analysis.
  - Studied and practised project management techniques.
- **Prediction of the yield of sugarcane in Maharashtra**, *(Academic)* *(Jan'21-May'21)*
  - Identified parameters that affected sugarcane yield from literature review, extracted data of 100 years from trusted sources and created a data set using Excel.
  - Modified the data set by eliminating insignificant data points for applying appropriate ML algorithms using Python, such as linear regression, Support Vector Machine and Random forest.
- **Development of an interactive map to visualize the Land use and Land cover**, *(Academic)* *(Jan'21-May'21)*
  - Created an interactive map for displaying LULC using web map services and feature services using Java and JS.
- **Identification of potential locations for wind and solar plants in Maharashtra**, *(Academic)* *(Jul'20-Nov'20)*
  - Identified suitable variables for constructing highly efficient wind and solar plants through literature review.
  - Collected geospatial data for collected variables, plotted in a map and analysed using QGIS.
- **India's groundwater resources- Challenges and way forward**, *(Academic)* *(Jul'20-Nov'20)*
  - The detailed study about drinking water sources, groundwater extraction, changes in groundwater policies and groundwater depletion in India since the 1980s.
- **Analysis of COVID cases and hospital availability in Karnataka using GIS**, *(Mapathon)* *(May'20-Jul'20)*
  - Collected COVID-related information from trusted sources, plotted on the map and analysed using QGIS to identify the effectiveness of the public healthcare system in handling COVID.
- **Performance of Karnataka State on SDGs**, *(Academic)* *(Jan'20-May'20)*
  - A detailed analysis of the performance of Karnataka on Sustainable Development Goals by collecting data from official websites and media reports, analysing it with the help of visualizing tools and techniques such as colour coding, radar diagrams, etc.
- **Depletion of Biodiversity in the Western ghats and its consequences**, *(Academic)* *(Jul'19-Nov'19))*
  - Identified the significance of Western Ghat biodiversity for the livelihood of local populations and challenges faced by the region and their impact on livelihood using literature review, case study analysis and interviews.
- **Design of Solar PV Distribution System**, *(Academic)* *(Jul'19-Nov'19))*
  - Calculated the energy requirement for the total households of the village Aamle, Palghar District, Maharashtra.
  - Performed Life Cycle Cost Analysis for the Solar PV electrification for the village and compared it with the typical system.
- **Study of Census data - Trivandrum District**, *(Academic)* *(Jul'19-Nov'19))*
  - Collected the census data of different variables for the last 40 years from official sources and cleaned the data for the study.
  - Visualized the data with the help of Charts(Radar diagrams, Charts), tables and maps with colour codes.
- **Inequality in India's Development Experience**, *(Academic)* *(Jul'19-Nov'19))*
  - Reviewed the term inequality broadly and identified different ways to measure inequality through a literature survey.
  - Identified different inequality in India from independence to now and their effect on government policies.

TECHNICAL SKILLS

- **Programming & Tools**: Python, Javascript, Java, HTML, Pandas, Scipy, Geopanda, QGIS, HEC RAS, LaTeX, ReactJS, Django, Android app development using Flutter, D3 Js, Google Earth Engine, GeoPanda, Rasterio