# Bliss Dexter Machado

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## ABOUT ME

Aspiring Data Scientist with a strong foundation in data analytics, machine learning, and frontend development. I am passionate about transforming complex data into actionable insights that drive real-world impact, particularly in sustainability, healthcare, and urban systems. With hands-on experience building data-driven platforms and research-oriented projects, I thrive at the intersection of data, technology, and problem-solving, and I am eager to contribute to high-impact, research-driven teams.

## EDUCATION

**Fr. Conceicao Rodrigues College of Engineering, Mumbai University**                  *Nov 2022 – Present*
*Bachelor of Science in Electronics and Computer Science*
Relevant Coursework: Big data analytics, data warehousing and mining, artificial intelligence, machine learning, cloud computing and web technologies

**Thomas Baptista Junior College**                                                                      *2020 – 2022*
*Pre-University education, Maharashtra State Board*
Coursework: PCMC (Physics, Chemistry, Mathematics, and Computer Science)

**Notre Dame School, Vasai**                                                                               *2011 – 2020*
*Central Board of Secondary Education*
Relevant Coursework: Mathematics, Science, English Literature, Environmental Education, Computer applications

## EXPERIENCE

**Co-founder of SafeWay Innovations |** *(Incubated at Fr. Conceicao Rodrigues College of Engineering, Mumbai University, Pre-incorporation)*                                                                     *Oct 2024 – Present*
- Designed and deployed **UrjaShakti**, a satellite imagery-powered aggregator platform for decentralized rooftop solar adoption, **onboarding 3+ vendors** and **facilitating 9 real-world installations** in Maharashtra during pilot testing.
- Documented data management policies and ensured adherence to institutional reporting standards.
- Implemented real-time financial analytics, ROI simulation and subsidy integration, reducing manual survey dependency by **60%** and improving vendor-user conversion rates.

## PROJECTS

**Arogya Kavach: Predictive Health Intelligence Platform|** *Python, XGBoost, GIS and Spatial analytics.*
- Integrated GIS-based spatial analysis and real-time APIs for surveillance insights.
- Enabled ASHA workers to report symptoms using mobile/web forms connected via REST APIs.
- Developed ML model for disease outbreak forecasting using health, climate, and trend data.

**Nirmal Data: AI enhanced Application for Automated Data Preparation, Estimation and Report Writing |** *Python*
- Built an AI-based data cleaning and validation engine.
- Designed a JSON-configurable, no-code pipeline generating audit-ready CSV/Excel/PDF reports with full traceability. Reduced data processing time by ~50% and improved accuracy by 25–35% for large-scale survey datasets.

**Varsha Bandhan-On spot assessment of Roof Top Rain water harvesting and artificial recharge|** *ReactJS, Firebase, Geospatial technology*
- CNN-based rooftop segmentation on satellite imagery achieving **~95.8% area accuracy** (benchmarked with NREL PVWatts).
- GIS-driven pipeline for CGWB-compliant feasibility, structure sizing, and DPR generation.
- Integrated groundwater, rainfall, and policy datasets into a scalable decision-support web platform.

**PRISM – Agentic AI Platform for RFP Automation|** *ReactJS, Firebase, Langraph*
- Agentic-AI & NLP system for automated RFP parsing **(~90% accuracy).**
- Implemented IS/IEC-compliant spec-matching logic across SKU and pricing datasets, achieving **~85–90%** match precision compared to manual evaluation.
- Automated pricing computation and response generation, reducing RFP turnaround time from hours to under 5 minutes.
- Cloud-deployed MVP reducing response time from hours to minutes.

**IoT-Enabled Drowsiness Detection System |** *IR Sensors, Computer Vision, EAR/MAR, Machine Learning*
- Developed and evaluated **three modular drowsiness detection models**, infrared-based prototype, wearable helmet device, and webcam-based CV model, targeting safety for two-wheelers to heavy trucks.
- Enabled live driver tracking and emergency alerts via **GPS and app integration**.

**Smart Parking Price Optimization System |** *Python, Bokeh, FPDF, GPS, Data Modeling*
- Developed a data-driven pricing engine for **14 real-world** parking lots using GPS-based competitor analysis, occupancy trends, and demand indicators like traffic and vehicle type.

## CASE STUDIES

### Arogya AI: AI-Driven Healthcare Transformation in Arid Regions
- Arogya AI is an integrated, ethical, and scalable AI-driven healthcare model that bridges last-mile access gaps, predicts climate-linked health risks, optimizes resources, and delivers sustainable care in arid regions like Jaisalmer, with global applicability to similar geographies.  <u>Click here</u>

### Digitizing Guwahati's Street Food: A Scalable Zomato-Led Model for Hygienic, Inclusive, and Local Food Delivery
- This case study proposes integrating Guwahati's street food ecosystem into Zomato through multilingual digital onboarding, hygiene assurance, AI-driven personalization, and phased market expansion to empower local vendors while delivering trusted, affordable, and culturally rich street food experiences to customers. <u>Click Here</u>

## ACHIEVEMENTS & CERTIFICATES
- **Winner of Smart India Hackathon** 2024 (Software Edition), by **Ministry of Education's Innovation Cell**
- **Finalist of Smart India Hackathon** 2025 (Software Edition), by **Ministry of Education's Innovation Cell, AICTE**
- **1st Runner up in Innovation, Design, Entrepreneurship (IDE) Bootcamp**, by **Ministry of Education's Innovation Cell.**
- **Winner** of Tech Vista Data Structures and Algorithm Contest **(IEEE)**, by Institute of Electrical and Electronics Engineers Technical Council, CRCE.
- **Completed** Advanced Learning Algorithm authorized by **DeepLearning.AI** and **Stanford University** and offered through Coursera **and Machine Learning with MATLAB by MathWorks.**
- **4th Rank and Finalist** in SRCC, Delhi University, GULF Medical University UAE, Case Study Competition.
- **First** Runner position in Badminton and Chess in Athlead, Fr. CRCE.
- **Finalist** in Kavach Hackathon, Cyber Security Hackathon in 2022 organized by Fr. CRCE.
- **Summer Analytics and Time Series Analysis** course by IIT Guwahati's Consulting and Analytics Club.

## PUBLICATIONS

**IoT-Enabled Drowsiness Detection Systems for Enhanced Road Safety Across Diverse Vehicle Types**      *April 17 2025*
- Developed an IoT-based multi-model drowsiness detection system, presented at the **2025 IEEE ICPC2T Conference**, achieved **92%+ accuracy** using IR sensors, computer vision (Eye Aspect Ratio/Mouth Aspect Ratio), and real-time mobile integration across diverse vehicle types.
**Publication:** *IEEE 2025 Fourth International Conference on Power, Control and Computing Technologies (ICPC2T)*

**Urja Shakti: A Data-Driven Aggregator Platform for Decentralized Rooftop Solar Using Satellite Imaging** *April 17 2025*
- UrjaShakti is an AI- and geospatial-intelligence driven platform that accurately identifies rooftop solar potential, forecasts energy generation, and enables data, backed adoption of sustainable solar infrastructure at scale.
**Publication:** *The 10th International Conference on Advances in Energy Research (ICAER), IIT Bombay, Mumbai, Springer Nature.*

## ACTIVITIES AND LEADERSHIP

**Graphics Co-Lead, Google Developer Student Clubs, CRCE, India**                          *Jan 2024 – May 2025*
- Organized and documented flagship technical events **Bit-N-Build 2024** and **Unplug 2025**, bringing together **65+ national/international** hackathon teams and **120+ startup builders** with **15+ industry mentors** and Investors.

**Iblossom Personality Development Centre, Vasai, India**                          *Jan 2023 – Jan 2024*
- Volunteered in teaching and presenting, honing oratory skills, and audience engagement. Developed decision-making, adaptability, and a growth mindset while enhancing leadership and communication through interactive discussions.

## TECHNICAL SKILLS

- **Technical Skills and Technologies**: MS Office, Excel (Advanced), Power BI, Python (Basic), Data Modelling, LaTex
- **Development Stack:** React.js, GIS, Rooftop mapping, API Integration, CNN modelling.

## SOFT SKILLS

- **Soft Skills:** Leadership, Team Coordination, Communication, Proactive Problem Solver, Attention to detail