

# Manish Kulkarni

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## WORK EXPERIENCE

### Antian Advanced Technologies

New Delhi, India

AI Team Lead

Jan 2024 – Present

- Led a team of developers, engineers, by implementing **agile methodologies, feedback systems**, resulting in improved **project turnaround time by 50%**
- Built the **RLHF pipeline** using **LilacML and Langsmith**, for the Coach-chatbot assisting with weightlifting and exercise, increasing the quality of **exercise-related conversations by 30%**.
- Precision-tuned **Mistral 7B, Llama, Falcon 7B, and Falcon 40B LLMs** using **LoRa, QLoRa, and RAG** methods, increasing **contextual response by 25%** and user satisfaction **scores by 30%**, resulting in improved customer interactions.
- Researched and developed a **multi-stage weightlifting activity recognition model** using **3D Resnet and Action detection model ASFormer**, improving temporal comprehension of model within video frames. (in R&D)

### Antian Advanced Technologies

New Delhi, India

Artificial Intelligence Engineer

July 2023 – Jan 2024

- Developed a **prototype of interview screening platform** using **AI-video analytics** to analyze nonverbal cues, **reducing screening time by 33%** and **identifying strong candidates with 20% greater accuracy**
- Research & developed a **mental health AI chatbot**, using **Mistral-7B model**, yielding a **consistent monthly  $\approx 2\%$  enhancement** in users' **comprehension of negative emotions**, measured through **Emotion Recognition Task** developed by **Roy kessels University, Netherlands**
- Engineered a **real-time vehicle identification and speed detection** system that accurately extracts **color, brand, and license plate** details at **30 fps**, leading to a **25% increase in traffic management efficiency** and **road safety**.
- Spearheaded the development of an **AI-powered threat aversion system** that detects **violence in CCTV feeds** and alerts **law enforcement with precise locations**, **slashing response time by 84%** and significantly enhancing public safety.
- Crafted **engaging voice content for LinkedIn ads**, with **87% voice naturalness**, leading to a **60% increase in views** & a **15% rise in brand awareness**
- Designed and developed IJET, an **AI-powered image editing tool** with **one-click features (background removal, magic eraser, animations, resolution enhancement)**, **reducing editing time by 50%**, resulting in a **100% increase in user efficiency**
- Spearheaded the creation and execution of an **intelligent social media analysis tool**, enhancing the organization's capabilities in understanding and leveraging social media data effectively.

### Antian Advanced Technologies

New Delhi, India

AI/ML Engineer Intern

Mar 2023 – June 23

- Developed Context classification, Threat Assessment Models, and Author Classification Models with more than 90% prediction accuracy enabling precise text categorization, risk analysis, and content source identification.
- Built robust translation models for Urdu to English and Chinese to English language pairs. Consistently achieved over 80% translation accuracy.
- Proficient in OCR with 98% accuracy in extracting text from diverse image formats. Developed an image summarization model for enhanced visual content interpretation.
- Utilized web scraping techniques for data collection from social media platforms (Facebook, Twitter, Telegram, Reddit, Discord, Instagram) using parameters like post/user IDs, hashtags, keywords, geolocation, and date range.
- Empowered data visualization techniques by generating word clouds (bigrams, trigrams) and conducting sentiment analysis, polarity, and subjectivity analysis for deeper insights.

## PROJECTS

### Secure Banking Authentication using Facial Recognition Technology

Mumbai, India

Feb 2023 – April 2023

- Developed a facial recognition system for banking applications using machine learning and deep learning techniques with 87% accuracy.
- Evaluated the system's performance in terms of speed by measuring the time it takes to confirm a customer's face and ensuring it does not exceed 3 seconds.
- Enabled MySQL for customer data management, conducted user testing with at least 50 participants, and achieve a user satisfaction score of at least 8 out of 10 and an ease-of-use score of at least 90 out of 100.
- Attained 4 potential challenges and limitations of implementing facial recognition technology in a banking environment and develop solutions to mitigate them.

### Predicting Bank Customer Churn using Machine Learning Techniques

Mumbai, India

Jan 2023 – Feb 2023

- Identified key factors using Data Visualization that contribute to bank customer churn using 4 demographic variables, including age, income, account balance, and tenure.

- Conducted a comparative analysis of 5 machine learning algorithms, including Logistic Regression, Decision Tree, Random Forest, XG-Boost, and Support Vector Machines, to predict customer churn.
- Developed an XG-Boost model with an accuracy of 86.54% and a Random Forest model with an accuracy of 86.45%.
- Traced feature importance techniques to investigate the impact of different variables on predicting customer churn and discovered the top three contributing factors: account balance (importance score of 0.37), age (importance score of 0.21), and tenure (importance score of 0.19).

#### **Exponentiated Log-Inverse Weibull Distribution: A Statistical Model for Analyzing Cancer Survival Data**

**Mumbai, India**  
Sept 2022 – Nov 2022

- Implemented statistical analysis of cancer patient life lengths using R programming, resulting in the identification of the Exponentiated log-inverse Wei-bull distribution with 98% accuracy.
- Analyzed a dataset of 92 observations (40 uncensored, 52 censored) for 4 different survival distributions using quantitative measures such as AIC and BIC to assess the goodness-of-fit of different survival distributions.
- Determined the best-fit survival model based on AIC and BIC values, resulting in a model that balanced complexity and accuracy, and quantified the improvement over alternative models

#### **LEADERSHIP EXPERIENCE**

##### **All India Marathi Literature Summit**

*Group Co-Ordinator*

**Nashik, India**  
Aug 2021 – Dec 2021

- Motivated students across Nashik for participation in summit resulting in 30% increase in volunteers.
- Collaborated with 10 schools and their respective faculties resulting in efficient summit.
- Streamlined a literary rally with participation of 240 students, covering a distance of 9 Kms.

##### **National Cadet Corps (NCC)**

*Cadet Senior Under Officer*

**Nashik, India**  
Oct 2019 – May 2021

- Mentored a team of 220 subordinates during the Republic Day Parade as Unit Representative and Parade Commander, ensuring smooth execution of the event and achieving a rating of 100%.
- Administered and guided a company of 110 members to complete assigned tasks.
- Headed the organizing team for Clean India Movement, coordinating 7 clean-up drives and engaging 268 volunteers to collect waste from 25 locations.

#### **SKILLS & INTERESTS**

**Hard Skills:** Python | R Programming | C++ | SQL | Data Analytics | Power BI | Tableau | Statistical Analysis

Machine Learning | Generative AI | Conversational AI | RAG | AWS Lambda | Fine-tuning

Computer Vision | NLP | Django | Flask | Docker | AWS SageMaker | Azure/AWS/GCP Cloud Services

**Soft Skills:** Adaptive | Collaborative | Inquisitive | Business Acumen

**Interests:** Quantum Computing | Genetic Algorithm | Cycling | Trekking | Gaming

#### **EDUCATION**

##### **Narsee Monjee Institute of Management Studies**

*MSc Statistics & Data Science*

**Mumbai, India**  
Jul 2022 – May 2025

##### **HPT Arts & RYK Science College**

*BSc Statistics*

**Nashik, India**  
Jul 2018 – Aug 2021