

MANTAVYA SONI

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[Certifications](#) ♦ <https://github.com/Mantavya131>

PROFESSIONAL EXPERIENCE (2020-Present)

Data Scientist

Fire Hose (Remote, New Jersey, United States)

- Orchestrated a cutting-edge project named “Multi-Agent Conversational AI Implementation” using “Autogen” to create a conversational AI framework that allows for the collaborative execution of tasks through automated group chats. This involved integrating conversational agents with advanced AI models (GPT-4) to facilitate real-time problem-solving and task management. My role included coding in Python, integrating various AI APIs, and setting up a dynamic environment for both tool-based and human agent interaction, showcasing my ability to leverage AI for innovative solutions and streamline complex workflows.
- Skills applied: Python, AI/ML Integration (GPT-4), API Utilization, Collaborative Software Development.

Software Engineering Intern

New Jersey Institute of Technology - Dept of Web System Design (Newark, New Jersey, United States)

- In a challenging project aimed at developing a brand and enhancing the business for a restaurant, I undertook a multifaceted approach that included a thorough business and competitive analysis, design of a user-friendly website targeting the "Hero Archetype," and application of Cialdini's 6 principles of persuasion to address a unique industry problem. My role spanned from business analyst to developer, employing tools like Figma for UI design and Next JS for development, alongside implementing automated Playwright tests and integrating Mailchimp and GDPR for marketing and data analysis. This collaborative effort, highlighted by 116 GitHub commits and the deployment of the website on “Vercel”, significantly boosted customer influx and engagement, laying a solid foundation for the restaurant's success by leveraging Node.js, React, and strategic business analysis to navigate the project from concept to completion.
- Skills applied: Figma, Next JS, Automated Testing (Playwright), GDPR compliance, Google Analytics, Mailchimp, GitHub. [View Project](#)

Data Analyst

Essel Groups Pvt Ltd (Noida, Uttar Pradesh, India)

- At EZ Mall, tasked with enhancing the user experience, I spearheaded the development of an innovative "Image Search Engine" to address the challenge of product discovery without the need for textual descriptions. Leveraging the capabilities of the VGG-16 model, I refined it to analyze user-uploaded images, extracting distinct features for comparison against our extensive product database. Utilizing the K-Nearest Neighbor algorithm, I facilitated the identification of the top 30 products with the highest similarity score to the queried image. This feature was seamlessly integrated into our platform through a meticulously developed and tested Flask API, revolutionizing how users interact with EZ Mall. This breakthrough significantly improved product search efficiency, allowing users to find exactly what they needed through visual queries alone, thereby enhancing customer satisfaction and positioning EZ Mall as a pioneer in e-commerce innovation.
- Skills applied: Flask, REST, Resnet, transfer learning, KNN, Unsupervised Learning [View Project](#)

Intelligence Specialist – Data Science

Valsad City Police – Department of Local Crime Branch (Gujarat, India)

- Tasked by the Crime Special Officer of Valsad city to leverage data analytics in tackling the escalating cyber crime rates, I embarked on a comprehensive data analysis endeavor. Utilizing Python's Pandas and NumPy libraries, I meticulously cleaned and processed the highly raw data to ensure its reliability for analysis. My role extended beyond analysis; I led a team of non-technical officers, guiding them on proper data management practices for future reference. Through Power BI, I visualized our findings, which were then shared with the special crime team. This initiative revealed specific zones vulnerable to certain crimes and traced the out-of-state origins of these criminal activities. Consequently, the police force was optimized for efficient deployment, civilians were educated on common oversights, and businesses that inadvertently facilitated crime were identified. This strategic approach not only enhanced police effectiveness but also fortified community safety against cyber crimes.
- Skills applied: Data Analysis, Python-Pandas, Python-Numerical Python, Data Cleaning, Process Improvement, Educational Leadership, Strategic Planning, and Reporting.

Machine Learning Engineer

International Institute of Information and Technology (Bangalore, India)

- Performed “Telecom Churn Prediction” using Advanced Machine Learning.
- Predicted customer churn, optimizing a telecom's customer retention strategy.
- Skills applied: Numerical Python, Pandas, Matplotlib, Seaborn, Scikit-learn, SMOTE, Random Forest Classifier, PCA. [View Project](#)
- Automated “Credit Card Fraud Detection” process by performing Advanced Classification Techniques
- Engineered a model to detect credit card fraudulent transactions as it occurs, enhancing financial security.
- Skills applied: XG Boosting, Random Forest, Gradient Boosting, SMOTE.. [View Project](#)

EDUCATION

MS in Data Science (3.83/4.0), New Jersey Institute of Technology

**Relevant Coursework:** Applied Statistics, Probability, Inferential Statistics, Hypothesis Testing, A/B testing, ANOVA, SAS, Big Data Analytics, Spark, Scala, Open CV, Semantic Search, Linear Regression, Ridge Regression, Lasso Regression, Reinforcement Learning, Regularization, Logistic Regression, Decision Tree, Boosting, Random Forest, Time Series Analysis, Principle Component Analysis, Clustering, Artificial Neural Network, Convolution Neural Network, Recurrent Neural Network, Natural Language Processing, Named Entity Recognition, Database Management System Design, SQL, Star Schema, Data Modelling, ETL, Web System Development, Agile, Cloud Computing, AWS, Data Analytics with R.

BS in Data Science (3.4/4.0), International Institute of Information and Technology Bangalore

# CORE SKILLS & TOOLS

- **Frameworks** React, Next JS, NodeJS, Clerk, Stripe, Flask, Pandas, Numpy, Elastic Search, Autogen, Matplotlib, Seaborn, TensorFlow, PyTorch, Keras, Scikit-Learn, Stats Model, OpenCV, Beautiful Soup
- **Programming Languages** Python, SQL, JavaScript, HTML, CSS
- **Databases** MySQL, PostgreSQL
- **Clouds** AWS
- **Analytical Tools** Tableau, Power BI, R, Excel
- **ML/DL Algorithms** Linear Regression, Logistic Regression, Decision Tree, Random Forest, KNN, Gradient Boosting, XG Boosting, Principle Component Analysis, Clustering, Convolution Neural Network, Recurrent Neural Network, Artificial Neural Network
- **Developer Tools** VS Code, Jupyter Notebook, Command Line, Git, GitHub, Vercel, Playwright, Poetry, Docker.