

# SAHAJ BHADJA

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## Education

### Pandit Deendayal Energy University

Bachelor of Technology in Computer Science and Engineering (CGPA of 9.72)

Nov 2020 - May 2024

Gandhinagar, Gujarat

## Work Experience

### Aasma Technology Solutions

Software Developer Intern

May 2023 – Aug 2023

Ahmedabad, India

- Engineered Manufacturing Resources Management software with Next.js, Material UI, Node.js, and MongoDB, incorporating API integrations, robust authentication, and authorization. Resulted in a 40% boost in client satisfaction and a 25% increase in operational efficiency.
- Implemented a user-friendly dashboard and comprehensive management tool, optimizing resource management for a client. The system significantly elevated client satisfaction by 40% and improved operation

### MINARVA

Data analyst Intern

Jun 2022 - Aug 2022

Ahmedabad

- Developed an advanced Sales Dashboard with Python, Tableau, and SQL, resulting in a 30% faster data processing and a 25% increase in decision-making efficiency through impactful visualization of sales trends, product categories, and customer demographics.
- Implemented data-driven strategies in financial analytics, conducting sentiment analysis on fintech stock market trends. Achieved a 48% reduction in investment losses, a 35% improvement in forecasting accuracy, and a subsequent 5% increase in revenue and 10% rise in customer engagement, contributing to a 12% boost in marketing campaign ROI.

## Projects

### Automated Object Detection System | YOLO, OpenCV, TensorFlow

- Developed an automated object detection system for autonomous vehicles using TensorFlow, OpenCV, and YOLO (You Only Look Once), achieving an impressive average detection accuracy of 93% across various object categories in real-world road environments.
- Implemented the YOLO-based object detection system on an NVIDIA Jetson board, enabling real-time inference speeds of up to 30 frames per second (FPS), crucial for ensuring timely and accurate object recognition in dynamic traffic scenarios.

### Image caption generator | Deep Learning, NLP

- Conducted a comparative analysis between Blip, Git, and Vit GPT-2 models, fine-tuning them with a football dataset comprising 10,000 images and 100,000 captions to achieve an accuracy improvement of 15% in caption generation with the BLIP model.
- Implemented a pre-trained model from Blip, resulting in a 67% reduction in captioning errors compared to baseline models, leading to the selection of the Blip model as the preferred choice for optimal caption generation performance.

### Youtube transcript summarizer | PEGASUS Transformer model

- Enhanced performance of the state-of-the-art PEGASUS Transformer model for summarizing conversational texts by fine-tuning and hyperparameter tuning.
- It generates concise summaries for dialogue-type texts and YouTube Transcripts. Improved the ROUGE score of pre-trained models for conversational texts from 0.01552 to 0.018547.

### Trend Tracker with Fashion Recommendation System | Deep Learning – CNN, React JS, Material UI, Strapi, AWS EC2

- The Trend Trekker project combines an e-commerce web application with data analysis and machine learning to recommend clothing based on user data.
- It uses CNN for fashion recommendation. The recommendation model is integrated in a user-friendly e-commerce web application. This system enhances the shopping experience by offering personalized fashion suggestions.

## HMIS (Hospital Management Information System) for ABDM | *React JS, Material UI, Node JS, MongoDB, Postman*

- Developed a Hospital Management Information System (HMIS) leveraging APIs from the Indian Government's Ayushman Bharat Digital Mission (ABDM). The system enables doctors to access patients' medical history on-demand, with the patient's consent.
- Implemented a seamless healthcare solution, connecting healthcare providers to ABDM APIs, allowing efficient retrieval of patient medical records. Result: Improved accessibility for doctors and enhanced patient care through instant access to medical history.

## Skills

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**Languages:** Python, Java, JavaScript(including React, Angular, Node, Next, Express), C/C++, Solidity

**Libraries/Frameworks:** Flask,Django, ReactJS, NodeJS, ExpressJS, NextJS, AngularJS, HTML5, Tailwind CSS, Seaborn, Streamlit, Matplotlib, OpenCV,

**Developer Tools:** VS Code, AWS, Linux, Docker, GitHub, Google Cloud Platforms, Anaconda, Oracle

**Databases:** MySQL, MongoDB, SQLite, Postgres

## Publications

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**S. Bhadja**, M. Ukani and K. Shah, "Comprehensive Analysis of Blockchain for Applicability in User Authentication." 2023 IEEE 2nd International Conference on Futuristic Technologies (INCOFT), Belgaum, India, 2023.

P. Malaviya, **S. Bhadja**, V. Gajjar and Y. Kumar , "Cyber Security and Data Mining: Detecting Malicious URL Using Data Mining Techniques", 2023 IEEE 2nd International Conference on Communication, Security and Artificial Intelligence (ICCSAI), Greater Noida, India. 2023.

## Position of Responsibility

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### Research Core Team

**Jul 2022 – Jul 2023**

*Society of Mathematics - The Mathematics Club of PDEU*

*Gandhinagar, India*

- Responsible for suggesting various new events which are not well known
- Research about various innovations done by the researchers all around the world for various use case.

### AI Core Team

**Jan 2022 – Mar 2023**

*ACM Student Chapter*

*Gandhinagar, India*

- Developed and executed comprehensive marketing models for a social media engagement of a particular topic, leading to a 50% increase in event participation.

### Event Management Head

**Jan 2022 - Nov 2023**

*SnT Committee*

*Gandhinagar, India*

- Managed the entire technical clubs which come under the Committee and conducted the Technical Fest of the college

### Research Team

**Mar 2022 - Mar 2023**

*CSI - Student Chapter*

*Gandhinagar, India*

- Curating lesser-known events, researching innovations from global researchers, and actively sharing emerging technology updates to foster knowledge exchange.

## Achievements

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- Achieved certificate in the NPTEL Course "Understanding Incubation and Entrepreneurship" by IIT Bombay.
- Achieved top 1% ranking in the NPTEL Course "Data Analytics with Python" by IIT Roorkee.
- Accomplished ranked 13th in the Hackathon event organized by IEEE in 2022.
- Secured second place at the Web 3.0 conference hosted by the college.
- Certificated by Coursera for completion of "Fundamentals of Product Marketing" course with good scores.