# Dhruv Shah

Stony Brook, New York

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## Education

**Masters of Science in Computer Science** **Aug 2024 - Jun 2026**
Stony Brook University **New York, USA**
- Course Work: Analysis of Algorithms, Data Science Fundamentals, Computer Vision

**Bachelor of Technology in Computer Science** **Jun 2020 - May 2024**
Nirma University : **CGPA 8.61 / 10.0** **Gujarat, India**
- Course Work: Operating Systems, Natural Language Processing, Pattern Recognition System

## Skills

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| **Languages** | : Java, JavaScript, Bootstrap, C, CSS, HTML, C++, C#, Python, Kotlin |
| **Frameworks and Databases** | : React.js, Node.js, Flask, Spring Boot, SocketIO, Express.js, MySQL, MongoDB |
| **Libraries** | : NumPy, Pandas, SciPy, Seaborn, Tensorflow, Pyspark, Keras, Scikit-learn, OpenCV, PyTorch, NLTK, Matplotlib, Librosa |
| **Tools and Platforms** | : Git, GitHub, Docker, Spark, Hadoop, Power BI, SAP B-1, Android Studio, Firebase |

## Work Experience

**Software Engineer | MindQuad Solutions, Gujarat, India** **Jun 2023 – May 2024**
- Engineered Gate Pass and Quality Control modules using **ASP.NET (C#) and SAP B1**, integrating real-time data from industrial weighing scales to SAP, boosting operational efficiency by 30% and achieving 98% accuracy in weight tracking.
- Worked closely with a cross-functional team to architect, develop, and rigorously test a high-performance scalable system, streamlining quality control workflows by automating and integrating processes across Inward, In-Process, and Pre-Dispatch stages, leading to enhanced compliance within the SAP environment.
- Created and deployed advanced reporting solutions using **Crystal Reports**, enabling transformative data-driven strategies with sophisticated **visualizations and real-time analytics**, significantly slashing reporting time by 40%.

**Software Developer | Spinfluence Digital, Gujarat, India** **May 2022 – Jul 2022**
- Led full-stack development of a website using **Spring Boot and MySQL**, implementing advanced features like asynchronous data processing and caching to enhance responsiveness and security, resulting in a 60% reduction in page load times.
- Spearheaded API responsiveness improvements, reducing latency from 4 seconds to 1 second, and established robust security protocols using **OAuth 2.0 and JWT** authentication, bolstering data integrity and access control.
- Facilitated strategic discussions with non-technical stakeholders, effectively bridging the gap between technical and business aspects; this collaborative approach resulted in a 25% reduction in project implementation time.

**Data Scientist | ShapeAI** **Jun 2021 – Aug 2021**
- Optimized **YOLO-based object detection** for manufacturing, achieving 97.5% mAP and 50 FPS, applied to counting items like bottles and boxes in high-throughput manufacturing environments.
- Orchestrated the YOLO system, embedding intelligent quality assurance to detect even the tiniest defects in bottles and boxes; automating detection, eliminating subpar products, and reducing defect rates.

## Projects

**Analyze Github Code** | *Python, Flask, LLM* | GitHub
- Built a Chrome extension to obtain summaries of GitHub repositories using **LLMs and harnessed Langchain** to interface with **OpenAI's GPT-3.5-turbo**, with **Flask** serving as the backend server to adeptly manage requests.
- Designed an intricate system to traverse each code file in the repository, carefully storing individual summaries, and culminating in a singular, cohesive summary synthesized by the model.

**Predictive Modeling for Stock Market Trends** | *Python, Statistical Analysis* | GitHub
- Conducted one-sample t-test and permutation testing to assess the randomness of stock closing trajectories.
- Implemented feature engineering, introducing handcrafted features 'Bid Ask Spread Percentage' and 'Reference Price WAP Ratio' which provided valuable insights into market dynamics, enhancing the model's predictive capacity
- Evaluated multiple regression models, including Linear, Ridge, Lasso, and Histogram-based Gradient Boosting Regression Tree, to determine the best-performing algorithm, using the Mean Absolute Error metric as a benchmark.

**Water Quality Analysis for Sustainable Water Resource Management** | *Python* | GitHub
- Applied a **Gradient Boosting Classifier** for potable water identification, achieving 80.14% accuracy. The project focused on improving water quality assessments in regions with unreliable testing methods.
- Employed **SMOTE-ENN for preprocessing** to address class imbalance and enhance model performance, ensuring safer drinking water through advanced machine learning techniques.
- Leveraged ensemble methods like Bagging and Random Forest to refine precision and reduce false positives. Conducted AUC-ROC and F1-score evaluations to validate the model's robustness and real-world effectiveness.

## Position of Responsibility

**Graduate Teaching Assistant** for Digital Intelligence | Stony Brook University **Aug 2024 - Present**
**Vice President** | Computer Society of India, Nirma University **Nov 2022 - Oct 2023**