# AI Internship Projects

**Name of the Intern**: GANESH

Name of the Found**er**: K. ABHINAY

**Name of the Reporting Manager**: Vikas

**Internship Duration**: 12/03/2025 – 12/06/2025

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**Projects**

1.  **Sentiment Analysis for Product Reviews**

    - Classify customer reviews as positive, negative, or neutral using NLP.

    - Evaluate model performance to help businesses improve offerings.

    - Tech Stack: Python, NLTK, SpaCy (NLP), Scikit-learn (Logistic Regression), TensorFlow/Keras (LSTM), Pandas, NumPy, Matplotlib/Seaborn.

2.  **AI-Driven Image Caption Generator**

    - Generate image captions using CNNs and RNNs.

    - Train on datasets like MS COCO for accessibility applications.

    - Tech Stack: Python, TensorFlow/PyTorch (CNNs, RNNs), OpenCV, Pre-trained models: VGG16, InceptionV3, Datasets: MS COCO, Flickr8k.

3.  **Predictive Maintenance System for Machinery**

    - Predict equipment failures using sensor data and time-series analysis.

    - Visualize results with a dashboard to reduce industrial downtime.

    - Tech Stack: Python, Scikit-learn (Random Forest, Gradient Boosting), Pandas, NumPy, Matplotlib, Dash, SciPy.

4.  **AI Voice Assistant for Task Management**

    - Build a voice-activated assistant with speech-to-text and NLP.

    - Integrate with tools like Google Tasks for user convenience.

    - Tech Stack: Python, SpeechRecognition, Google Speech API, SpaCy, Rasa, APIs: Todoist, Google Tasks, PyAudio.

5. **Facial Expression Recognition System**

- Classify facial expressions using pre-trained CNNs.

- Enable real-time detection for mental health applications.

- Tech Stack: Python, TensorFlow/PyTorch (CNNs), OpenCV, Pre-trained models: VGG16, ResNet, Dataset: FER2013.

6. AI-Powered News Aggregator and Summarizer

- Scrape and summarize news articles using NLP and transformers.

- Display categorized content on a simple web interface.

- Tech Stack: Python, BeautifulSoup, NewsAPI, Hugging Face Transformers (BERT), Flask/Django, NLTK, SpaCy.

7. **Traffic Sign Recognition for Autonomous Driving**

- Identify traffic signs using deep learning on GTSRB dataset.

- Enhance model robustness with data augmentation.

- Tech Stack: Python, TensorFlow/PyTorch, OpenCV, Dataset: GTSRB, Albumentations.

8. **AI Chatbot for Mental Health Support**

- Provide mental health support using NLP and sentiment analysis.

- Include a fallback to suggest professional help.

- Tech Stack: Python, Rasa, SpaCy, TextBlob, Hugging Face Transformers, Flask (optional).

9. **Stock Price Prediction with AI**

- Forecast stock prices with time-series models like LSTM.

- Visualize predictions using historical data and APIs.

- Tech Stack: Python, Pandas, NumPy, Scikit-learn (ARIMA), TensorFlow (LSTM), APIs: Alpha Vantage, Yahoo Finance, Matplotlib.

10. **AI-Powered Document Classifier**

- Classify documents into categories using NLP and OCR.

- Support multi-page processing with structured output.

- Tech Stack: Python, Tesseract OCR, SpaCy, Scikit-learn, Hugging Face Transformers (optional), Pandas.

**Instructions**

- Upload day-to-day work in the WhatsApp group. Take reference from any source.

- Send the projects via GitHub links.

- Create a repository named **Q Techsolutions Internship** in GitHub.

- Attendance is mandatory to complete the internship and receive the certificate.

- Apply for leave in advance (at least one day prior) via the app or inform the Reporting Manager in the WhatsApp group.

- Report pending tasks to the Reporting Manager as per the assigned date; the schedule may be adjusted accordingly.

- Work process meetings will be scheduled every three to four days as needed.

- Respond promptly to calls and messages from the team.

(Note: Sunday is a holiday and does not count as a working day.)

Thank You,

Best Regards,

Q Techsolutions