

# Ria Pandey

Machine learning Enthusiast

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## EDUCATION

**Bachelor of Technology (B.Tech.) - computer science and engineering : 2022 - 2026 (Expected)**

*Vellore Institute of technology , Bhopal*

**12<sup>th</sup> Standard (2022)**

**10<sup>th</sup> Standard (2020)**

*Ongoing*

*Rajkumar College, Raipur*

*Rajkumar College, Raipur*

*Current CGPA:9.12*

*Percentage : 95%*

*Percentage : 93%*

## PROJECTS

### Forest Fire Prediction System:

- Developed a machine learning model using **Python** and libraries like **NumPy**, **Pandas**, **Pickle**, and **Scikit-Learn** to predict forest fires, achieving 80% accuracy with the **Random Forest algorithm**.
- Conducted comprehensive **data preprocessing** (handling missing values, feature scaling, and encoding categorical variables), followed by **hyperparameter tuning** and **cross-validation** to optimize model performance.
- Deployed the model as an interactive web application with **Streamlit**, providing real-time prediction visualization and ensuring efficient model usage by integrating the **Pickle** module for saving and loading trained models.

### Sentiment Analysis on SpamAM dataset:

- Developed a sentiment analysis model using **AvgWord2Vec** for text vectorization, **Logistic Regression** for classification. Text preprocessing by case normalization, stopword removal, special character filtering, URL and HTML tag stripping, and lemmatization using WordNetLemmatizer.
- Integrated **NLTK** and **BeautifulSoup** to refine text cleaning, improving model accuracy and robustness. Optimized performance by tuning hyperparameters and reducing computational overheads.
- Enhanced user experience with a **structured pipeline** for real-time sentiment prediction, ensuring seamless integration with various applications.
- Improved model accuracy from **57%** (TF-IDF) to **82%** (AvgWord2Vec) by refining text vectorization and classification techniques.

### Vidly Video Rental Application:

- Developed a full-stack video rental application using the MERN stack (**MongoDB**, **Express**, **React**, **Node.js**) with secure **JWT-based authentication** and role-based authorization.
- Designed and implemented a **RESTful API** for managing movies, genres, rentals, and customers, ensuring robust CRUD operations and data validation using **Joi**.
- Utilized **React Router** for client-side routing and optimized the application for pagination, sorting, and filtering to enhance user experience and data management.

## SKILLS

### Technical skills :

**Programming Languages :** C++, Python, Java, HTML, CSS, JavaScript

**Libraries and Frameworks:** Express.js, Node.js

**Databases:** SQL, MongoDB

**Machine learning:** Logistic Regression, Decision Trees, Random Forest, Naïve Bayes, Support Vector Machines (SVM), KNN

**Deep Learning:** Understanding of Neural Networks, Word Embeddings (Word2Vec, AvgWord2Vec).

**Natural Language Processing :** Tokenization, Lemmatization, Stemming, Stopword Removal, TF-IDF, AvgWord2Vec.

**Libraries & Tools:** Scikit-Learn, NLTK, SpaCy, Sumy, Gensim, BeautifulSoup

## LICENSES & CERTIFICATIONS

- Python Essentials - Vityarathi** 2022
- The Bits and Bytes of Computer Networking – Google** 2023
- Could Computing – NPTEL** 2024