AMAN KUMAR

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CAREER SUMMARY

Software engineer with expertise in Data Structures, Algorithms, software development, machine learning, LLD, HLD, and web applications. Proficient in C++, Python, JavaScript, with a focus on ML algorithms. Experienced in building and deploying scalable applications. Proven in process optimization and performance enhancement. **Top 7.7% on LeetCode**, highlighting strong problem-solving and algorithmic skills.

EDUCATION

NOIDA INSTITUTE OF ENGINEERING AND TECHNOLOGY **07 2020 – 05 2024**
*B.TECH IN COMPUTER SCIENCE(AIML) - **CGPA - 08/10*** *NOIDA, INDIA*

EXPERIENCE

Ninestars Information Technologies Pvt. Ltd. **May 2024 – Present**
Trainee-Software Development *Bengaluru INDIA*

- Contributing to projects like AOTMGPT, AOTM AIOCR, AOTM EDGE Backend.
- OCR STP XML Parsing: Gained hands-on experience in Optical Character Recognition (OCR) and Standard Template Protocol (STP) XML parsing.
- OpenCV: Implemented bounding box detection using OpenCV for image processing tasks and related works, enhancing object recognition accuracy and efficiency.
- Contributed RnDlib, a Python library for drawing bounding boxes and printing characters on images using XML files in various formats.
- Django REST Framework:Developed APIs for the AIOCR and AOTM EDGE projects and built Websockets.
- FastAPI Development: Transitioned API development to FastAPI, maintaining functionality and improving performance.
- WebSocket, Integrated WebSocket in the AOTM OCR project to retrieve real-time status of character recognition and created Websockets for Broadcasting the response for multi users in AOTM EDGE. Utilized RabbitMQ for handling high-volume user interactions, ensuring system stability.
- Text Classification with SVM: Developed a text classification model using Support Vector Machine (SVM). Utilized TF-IDF, CountVectorizer, and Word2Vec for feature extraction; currently exploring neural networks to enhance classification accuracy.

PROJECTS

Text Style Classification Model | ResNet-18, PyTorch, torchvision, OpenCV, NumPy, Matplotlib

- Developed a convolutional neural network to classify text styles (bold, italic, normal) using PyTorch, achieving an accuracy of 93%.
- Implemented data preprocessing and augmentation techniques, enhancing model robustness and performance.
- Utilized transfer learning with a pre-trained ResNet-18 model, effectively reducing training time by 70% and improving prediction accuracy.
- Created a Matplotlib visualization tool for improved interpretability of predictions.

Live Support Dashboard - Backend | Python, Django, WebSockets, PostgreSQL, Kafka, Docker

- Built REST APIs for room operations (create, join, manage).
- Implemented WebSocket for real-time group messaging, authenticated by `room_id__user_id`.
- Managed in-memory message storage to bypass database usage for messages.
- Utilized Kafka for handling high-volume user interactions, ensuring system stability.
- Containerized application with Docker for deployment.
- Future Enhancements: Plan to integrate image and video sharing capabilities within chat groups.

TECHNICAL SKILLS

Languages: Python, C++, JavaScript, SQL, HTML, CSS , Tailwind CSS, XML
Developer Tools: VS Code, Jupyter, Sublime-text, MySQL workbench, PostgreSQL, Docker, Redis, Apache Kafka, RabbitMQ
Technologies/Frameworks: OpenCV, SVM, FastAPI,Django Rest Framework,WebSocket,ReactJS,NodeJS, Git