Akash R Chavan

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PROFESSIONAL SUMMARY

- **Python Developer** with experience in developing and deploying **ML models** using **Python, TensorFlow, PyTorch and Keras.**
- Hands on experience in **Deep Learning** architectures including **CNNs, RNNs, LSTMs, and Transformers** for various applications such as **Computer Vision**, **Natural Language Processing**.
- Experience in developing and fine-tuning **large language models (LLMs)** using frameworks like **Hugging Face Transformers** and **LangChain**.
- Experience in data analysis and visualization using libraries such as **Pandas**, **PySpark**, **NumPy**, **Matplotlib**, and **Seaborn**.
- Experienced in working with big data technologies like **Apache Spark** and **Hadoop** for distributed machine learning.
- Cloud computing specialist with expertise in ML-specific services such as **AWS SageMaker**, **Google Cloud AI Platform**, and **Azure Machine Learning**.
- Skilled in **MLOps** practices, including version control for ML models, automated testing, and continuous integration/deployment **(CI/CD) for ML pipelines**.
- Proficient in using **GPU acceleration** for deep learning tasks and optimizing models for efficient inference.
- Experience in developing and deploying machine learning models on edge devices and mobile platforms.
- Knowledgeable in ethical AI practices, including bias detection and mitigation, model interpretability, and responsible AI development**.**

PROFESSIONAL EXPERIENCE

Better Angeles   Sept 2024 – Present
Full Stack Developer

- Developed and enhanced **backend services** and **APIs** to support **frontend** functionalities.
- Managed and optimized the **Django monolith architecture** and contributed to database management and query optimization.
- Assisting in front-end development when needed, particularly integrating **APIs** with the **React Native** mobile application.
- Collaborated on the maintenance and enhancement of **AWS** environment, ensuring efficient management and deployment of resources.
- Participated in the setup and improvement of the **CI/CD pipeline** to streamline deployment processes.
- Contributed to the establishment and maintenance of testing frameworks focusing on component, unit and end-to-end tests.

FOSSEE GitHub   Feb 2019 – May 2022
Senior Software Engineer

- Developed an e-learning platform using **Python**, **Django**, **Django Rest Framework**, **Vue.js** and **AWS**.
- Implemented a **real-time** Moderator Dashboard for monitoring user activities.
- Designed and built a Message/feedback system using **Django Channels** for user-support team communication.
- Created an **offline learning feature**, enabling users to download and complete courses without internet access.
- Enhanced frontend functionality and user experience using **Vue.js.**
- Developed RESTful APIs with **Django Rest Framework** to support platform features.
- Optimized Django application performance through query optimization techniques, including **select_related** and **prefetch_related**.
- Implemented a robust notification system using **Celery, Redis** and **Django Channels**.
- Designed and integrated a Discussion Forum to facilitate course-related conversations among users.
- Implemented a comprehensive API to support platform features and integrations

Indian Railways   June 2020 - Oct 2020
Software Engineer

- Implemented timetabling solutions using **Python**, **Java**, **PySpark**, **NumPy**, and **Bash**; **reduced scheduling errors** and **enhanced operational efficiency**.
- Created Python scripts to automate data workflows, ensuring accurate data manipulation and reporting, leading to a **reduction in processing time** and **enhancing team productivity**.

Virtual Labs GitHub   Oct 2017 – Feb 2019
Software Engineer

- Created a web application enabling remote access to Single Board Heater Systems (SBHS), enhancing accessibility and user experience
- Implemented a **load-sharing master-slave architecture** using **Raspberry Pi's** optimizing communication between SBHS devices and the central server.
- Developed a lightweight **Flask server** deployed on Raspberry Pi's, establishing an efficient communication medium between SBHS hardware and the main server.
- Designed and implemented a Moderator interface. Giving administrators remote control capabilities over SBHS devices.
- Created a health monitoring script to track and report SBHS hardware status in real-time, improving system reliability and maintenance.
- Integrated real-time data visualization using **Chart.js**, allowing users to view and analyze SBHS readings through an web interface.
- Developed a slot booking interface, streamlining the process for users to reserve and utilize SBHS devices efficiently.
- Created an automated power management feature, optimizing usage by automatically turning devices on/off.

Tudip Technologies   Aug 2016 – Oct 2017
Software Engineer
- Developed scalable backend services using **Python**, **Flask**, and **PostgreSQL** for various client projects.
- Design and implemented **RESTful APIs**, integrating with third-party services, and ensuring high performance and security.
- Mentored interns, conducted **code reviews**, and provided technical guidance on best practices.
- Coordinated with cross-functional teams to gather requirements, plan sprints, and deliver features on time.

TECHNICAL SKILLS

Programming Languages: Python, JavaScript, TypeScript
Frameworks and Libraries: Node.js, Express.js, Django, Flask, FastAPI, React, Vue, GraphQL, REST, Next.js
Databases: MongoDB, MySQL, PostgreSQL, DynamoDB, Redis
Cloud and DevOps: AWS (EC2, S3, Lambda, CloudFront, CloudFormation, SQS), CI/CD/ DevOps, Docker, Kubernetes, Microservices
Testing and Methodologies: Pytest, Unittest, TDD, BDD
Tools and Platforms: Trello, Kanban, Git, Agile
Data Processing and Machine Learning: Pandas, Matplotlib, NumPy, Seaborn, PySpark, PyTorch, TensorFlow, Keras, Transformers, Kafka, LLMs, OpenAI API, LangChain, Deep learning, LLMOps

EDUCATION

California State University, Los Angeles
Master of Science in Computer Science – GPA 4.00 | Los Angeles, California   May 2024

Deogiri Institute of Engineering and Management Studies, Aurangabad
Bachelor of Engineering in Computer Science and Engineering - GPA 3.46 | Aurangabad, India   Jul 2016

PROJECTS

Sentiment Analysis using BERT and Transformers GitHub
- Developed a sentiment analysis model leveraging **BERT** and **Hugging Face Transformers**, achieving an accuracy of 92%.
- Scraped over 18,000 reviews from Google Play for multiple apps and saved them to a CSV file, ensuring comprehensive data collection.
- Incorporated the BertModel to build a sentiment classifier, followed by training the model with the prepared data.
- Created a REST API for sentiment analysis using the trained BERT model, enabling easy integration and real-time analysis capabilities
- Leveraged **Python, PySpark, google-play-scrapper, FastAPI**, and **PyTorch** for data processing, web scraping, API development and model training.

Traffic Sign Classification using Transfer Learning GitHub
- Built an image classification model using **Torchvision** to classify traffic signs.
- Leveraged transfer learning techniques to enhance the classification of traffic sign images.
- Fine-tuned a pre-trained model to accurately classify raw pixel data of traffic signs.
- Utilized a dataset containing 50,000 annotated images representing over 40 different traffic signs.
- Achieved a training accuracy of 99%, demonstrating the model's effectiveness.

Fashion Trends Chatbot GitHub
- Developed a custom chatbot leveraging **OpenAI's GPT** model to provide insights into 2023 fashion trends.
- Expanded the chatbot's capabilities to handle multi-turn conversation and **maintain context** over multiple interactions.

Landmark Classification & Tagging for Social Media
- Developed a Convolutional Neural Network from scratch to classify landmarks in images, achieving over 50% accuracy on the test set.
- Implemented **transfer learning** techniques using pre-trained models to improve classification accuracy to over 60%.
- Designed and optimized data preprocessing pipelines, including image resizing, normalization, and augmentation to enhance model performance.
- Exported trained models using **TorchScript** for efficient deployment and created a simple app interface for real-time landmark classification.
- Applied end-to-end machine learning workflow, including data analysis, model architecture design, hyperparameter tuning, and performance evaluation on a challenging multi-class image classification task.