Shishir Bastola

Undergraduate Computer Engineering

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EDUCATION

Bachelor in Computer Engineering — Balkhu, Kathmandu
Advanced College of Engg. Management — **Aug, 2019 - Present**

+2 in Science — Lainchour, Kathmandu
National College of Science (NIST) — **July , 2016 - May, 2019**

LANGUAGE

English: 3/5 **Nepali:** 4/5

SKILLS SUMMARY

- **Language:** Python, C, C++.
- **Framework:** Django(experienced), Langchain(beginner), Spacy(beginner), etc.
- **Tools:** vector database (beginner) , Figma (experienced),
- **Data and Infrastructure:** Cluster and Classification (novice) ,Data Visualization (novice), Nginx (beginner), Azure (beginner), AWS S3 (beginner)
- **Platforms:** Jupyter Notebook, Visual Studio Code.
- **Other:** Ollama, ontology, Resource Description Framework (RDF), matplotlib, numpy, GenerativeAI, Retrieval augmented generation (RAG) etc

WORK EXPERIENCE

Data Science Intern — **Jan, 2024 - Present**
Facet Technology / Dhumbarahi
During my 3-month internship, I worked with ontology and RDF to manage data, learned generative AI techniques, and gained hands-on experience with Large Language Models (LLMs). I used vector databases to handle large datasets, implemented Retrieval-Augmented Generation (RAG) methods, and developed applications using LangChain for streamlined AI processes.

PROJECTS

Protein Secondary Structure Prediction
It is a Computer Engineering major project. We conducted a research-based project focused on utilizing various neural network architectures for secondary protein structure prediction.

- **Key Features:** Bi-TCN, Bi-RNN, RNN, and TCN neural network architectures for protein structure prediction.
- **My Role and Responsibilities:** RNN implementation and research for protein structure prediction, also contributed to project documentation.
- **Skills Utilized:** Machine learning techniques, data preprocessing, hyperparameter tuning, and feature engineering, with strong analytical skills and research.

- **Achievements:** Implemented and evaluated multiple neural network architectures for protein structure prediction, identifying Bi-TCN as the most effective, and offering valuable insights for future research.

https://github.com/Pradipspk/Protein-Structure-Prediction

Vadagadi

"Vadagadi" is a vehicle recommendation platform developed using Django. Here are the key features of this project:

- **Recommendation Systems:** It has content-based and collaborative filtering algorithms to provide personalized vehicle recommendations based on user preferences.
- **User Authentication System:** It contains a user authentication system using Django to secure and personalize user experiences.
- **Order History:** Developed an order history feature, allowing users to track their previous vehicle selections for an enhanced browsing experience.
- **Filtering Options:** It contains filtering options, enabling users to search results based on categories, such as cars and bikes, as well as other criteria.
- **Price Filtering:** It provides a dynamic price filtering system to assist users in finding vehicles within their specified budget.
- **Contact Us via Mail:** Included a "Contact Us" feature, allowing users to reach out via email for inquiries and feedback.
- **Technology Used:** Built on the Django framework, utilizing content-based and collaborative filtering techniques. The project also incorporates a user authentication system and features HTML, CSS, and other technologies to enhance the user interface.

https://github.com/Shishir8957/vadagadi

Talk to PDF

In this project, I learned key concepts and tools related to generative AI. I worked with large language models (LLMs) and integrated them with vector databases for efficient data retrieval. I used Hugging Face models for various natural language processing tasks and applied CTransformers for optimizing model performance, and utilized LangChain for building AI workflows. Additionally, I gained hands-on experience with OpenAI's tools to build AI applications. This project enhanced my skills in AI model implementation and practical applications.

https://github.com/Shishir8957/document_chatbot

Blogging webpage

It is a blogging website using Python's Django framework. Project Contributions are:

- **User Authentication System:** It has a secure user authentication system with login, register, and forget password features using Django's authentication system.
- **Email Verification System:** Email verification using Django to enhance account security and validate user identities.
- **Email Notification System:** Email notification system utilizing Django's email capabilities to keep users informed about activities and updates.
- **Comment System:** Dynamic comment system within the Django framework to foster user engagement and facilitate discussions on blog posts.
- **Blogging History:** Blogging history feature using Django models, allowing users to track and revisit their past posts for an enhanced user experience.
- **Technology used:** It is built using HTML, CSS, Materialize for styling, and Auth0 for additional authentication functionalities, in addition to Django for the backend.

https://github.com/Shishir8957/thesecretvaleyjournal

Movie Recomendation

I developed a movie recommendation system using cosine similarity. This means the system finds similarities between users' tastes and movie attributes to suggest films they might like. By comparing things like genre, actors, and plot, it offers personalized suggestions. It's like having a friend who knows exactly what movies you'll enjoy based on your preferences and what you've watched before.
https://github.com/Shishir8957/MovieRecomendationSystem

TRAINING AND CERTIFICATION

Generative AI **April 2024 - May 2024**

ineuron.ai

I completed the Generative AI Community Edition course, which provided a dynamic learning environment in the fascinating field of generative artificial intelligence. The course emphasised community participation and offered insights into generative models and various frameworks. I gained knowledge about GenAI Vector DB, prompting techniques, Langchain, LLM (Large Language Models), and Ollama.

NLP In Python **Feb 2024 - March 2024**

Codebasics

I acquired Natural Language Processing (NLP) skills through a basic course on YouTube from Codebasics, where I constructed a chatbot that understands conversation flow.

AWS **Oct 2023 - Dec 2023**

Advanced College of Engineering

I received training on AWS during our university's Enterprise Computing course, where we covered fundamental AWS concepts such as S3 buckets and EC2 instances.