Shikhar Mishra

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EDUCATION

Chhatrapati Shahu ji Maharaj University — Kanpur, UP
*Bachelor of Science, Major in Mathematics & Minor in Artificial Intelligence (**9.16 CGPA**)* — May. 2021 – June 2024

Stepping Stones Intermediate College — Kanpur, UP
*12th Intermediate (**8.47 CGPA**)* — March. 2020 – July 2021

EXPERIENCE

Machine Learning Research Intern — June 2024 – Present
*OrangeWood Labs (**Y-Combinator W18**)* — San Francisco, CA (Hybrid)
- Implemented Reinforcement Learning algorithms for multi-agent systems, improving agent cooperation and competitive strategies, resulting in enhancement in task completion efficiency and robustness.
- Created and tested a scalable multi-agent system architecture, enabling seamless collaboration among heterogeneous agents, leading to successful multiple functions calling systems
- Developed an interactive GPT-style model that allowed users to communicate with robots in multiple languages, including English, Hindi, and Spanish, improving user engagement and satisfaction by 40%.

N&W Season 4 Builder — Sep 2023 - Oct 2023
*Buildspace (**Y-Combinator W20 & a16z**)* — San Francisco, CA (Remote)
- Selected for a 6-week program to build a product in the tech community with experts from all around the world ending with a 3-day demo.
- Built an machine learning algorithm that, when given details of patients report, would tell whether or not, the person has a fatal heart disease not.
- Used advanced algorithms like XGBoost, Naive Bayes and Logistic Regression for building a robust system that score over 90% accuracy

PROJECTS

transformer.p | *PyTorch, Deep Learning, Neural Networks* — March 2024 – May 2024
- Engineered a transformer from scratch using Python, focusing on deep learning principles and state-of-the-art attention mechanisms to facilitate efficient natural language processing.
- Created essential transformer components including multi-head attention, positional encoding, and feedforward neural networks, ensuring modularity and scalability for various NLP tasks.
- Validated the transformer's performance on tasks like text classification and machine translation, benchmarking results against pre-trained models to highlight efficiency and accuracy.

V-Transformer | *Computer Vision, CNNs, Transformers* — Jan 2024 – Feb 2024
- Maded a Vision Transformer (ViT) model entirely from scratch, leveraging Python to apply transformer architecture principles to image data for advanced computer vision tasks.
- Designed and integrated crucial ViT elements such as image patch embedding, multi-head self-attention, and transformer encoder layers, enabling robust performance in image classification.
- Validated the model's effectiveness through rigorous testing on CIFAR-10 image datasets, demonstrating competitive accuracy compared to traditional convolutional neural networks (CNNs) and other state-of-the-art models.

TECHNICAL SKILLS

Languages: Python, C, C++, Golang, SQL

Machine Learning Frameworks: TensorFlow, PyTorch, Keras, Scikit-learn

Deep Learning: Transformers, RNNs, CNNs, GANs

Data Analysis & Visualization: pandas, NumPy, Matplotlib, Seaborn, Plotly

Development Tools: Git, Docker, Jupyter, Google Colab, VS Code

Big Data & Databases: SQL, NoSQL (MongoDB, Cassandra)

Cloud Platforms: AWS (SageMaker, EC2), Google Cloud (AI Platform), Azure (ML Studio)