



S M Kushal
Aerospace Engineering 2020 - 2024
Indian Institute of Technology Bombay
GPA 6.55
AIR 807 in JEE Advanced | AIR 264 in JEE Mains

GitHub: @kiluazen
Email:kushalsokke@gmail.com
Website:kushalsm.com

EXPERIENCE

Applied AI & Full Stack | ELZO.AI

(Jan - Oct 2024)

- Designed and Implemented a pipeline for **production-ready RAG** (Retrieval-Augmented Generation) into the Django code-base, enhancing contextual relevance in AI-powered user research studies.
- Developed an **AI Slack bot** that has context across the workspace. **RAG pipeline with real time data.**
- Architected** and deployed an AI-driven **open-ended survey system**, designing the agent structure and crafting effective prompts to generate comprehensive question sets from simple objectives.
- Developed an automated **insight generation system**, extracting **key observations with their frequencies**, actionable insights, **user sentiments** etc.. **from the data** collected through the **open-ended survey system**.
- Experimented with **fine-tuning** open-source models with 100's of User Research Conversational Data.
- Coded** React based **frontend components** for the conversation system and built the **landing page**.
- Learned to write YAML files while **setting up a staging server**, understanding **DevOps processes**.
- Gained deep understanding of user research methodologies and product management needs, applying this knowledge to refine AI-generated questions and improve study effectiveness.

AI RESEARCH | Graph Neural Networks

(May - Jun 2023)

- Implemented techniques that **Generalize GNNs better than state-of-the-art**. Authored a paper [arXiv](#)
- Introduced **Residual Connections** into GNNs to foster scalability, **higher test accuracy**. Incorporated **learnable weights** within **message passing**, enhancing the **information propagation within GNN**.

Data Analysis, Prediction and Optimization | WorkdePot

(Nov - Dec 2023)

- Predicted sales for Workedepot store using **forecasting** algorithms **ARIMA, Prophet, Exp Smoothing**, etc.
- Built a **real-time system** to recommend **quantity, date**, shipping methods based on forecasted demands.

PROJECTS

OPEN SOURCE at Hugging Face, UnifyAI

(July - Oct 2023)

- Wrote Chapters **Model Optimization, Model Deployment** for the **Hugging Face Computer Vision Course**
- Resolved an Issue** for the **UnifyAI** Platform regarding **compatibility** between **JAX and Pytorch**.

Fine Tuning a LLM on a Curated Dataset | GPT2

(March 2023)

- Fine-Tuned GPT2** pretrained on 28,000 paragraphs from **Paul Graham's Essays** using **Hugging Face API**.
- Scraped** the data, **Tokenized** and **Trained** the model. Built a **Gradio App** to interact with the model.

Reinforcement Learning

(Autumn 2023)

- Built an Agent to play **Pool** using **UCT Tree Search**. **Learnt** the workings behind the famous **AlphaGo**.
- Coded **Howard policy iteration** to solve a 3-player 4x4 **football** game with **encoder, planner, decoder** [GitHub](#)

Computer Vision, NLP | CS231n Stanford

(Nov-Jan 2022)

- Implemented Back-Propagation for **Batch-Norm, Softmax** to gain stronger intuition. [Github](#).
- Trained** a transformer based **Shakespeare LLM model**, a **Image Captioning & Segmentation** models.
- Wrote **Multi-Head Attention** from scratch using **Numpy**, gained **intuition for attention mechanism**

TECHNICAL SKILLS	Full-Stack : Django Gin Ruby on Rails React Redux Cloud : Docker Kubernetes Google-Cloud AI: PyTorch JAX Hugging Face
TOOLS	Postman Git Figma Whimsical Cursor AI
LANGUAGES	Python Javascript GoLang English Hindi Kannada Telugu
RELEVANT COURSES AT IITB	CS728 Organization of Web Information CS726 Advanced ML CS747 Intelligent & Learning Agents Reinforcement Learning SC 646 Distributed Optimization & ML
HOBBIES	Books Gym Listening to Podcasts Writing