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Examination	University	Institute	Year
Graduation	IIT Bombay	IIT Bombay	2025

PROFESSIONAL EXPERIENCE

Mitigating Catastrophic Forgetting in LLMs

[May '24 - Current]

(Research Internship | IIT (BHU) Varanasi | Guide: **Prof. Sanjay Kumar Singh**)

- Successfully implemented and **finetuned** various open-source models such as **LLaMA3-8B** & **StableLM-7B**
- Applied **context augmentation**, **RAG** and **ReAct agents** on various LLMs using **LlamaIndex** framework
- Developing novel & innovative methods to mitigate **Catastrophic Forgetting** in **continually trained** LLMs

Natural Language Processing Internship | Duonomic

[Jul '24 - Current]

- Developing a debate bot using **LLMs** for **speech-to-speech** interactions with the users on any topic and side
- Fine-tuning** LLMs for debating and speech related tasks, improving argumentative capabilities of the model
- Developing scalable solutions for LLM integration on large scale, ensuring efficient/responsive user interactions

KEY PROJECTS

Self-supervised Keypoint Detection Model | *BKinD*

[Aug '23 - Nov '23]

(Course Project | IIT Bombay | Guide: **Prof. P. Balamurugan**)

- Gained insights into a **Self-Supervised** Neural Network for extracting key-points from dynamic video inputs
- Improved the model by implementing a **shadow-invariant module**, enhancing accuracy across diverse inputs
- Created and preprocessed **5+** custom datasets with **Pillow** & **OpenCV** for model training and flaw detection

Customized LLM for imitation and automation of user chats | *SpeakLikeMe* | Self-Project [May '24]

- Preprocessed 100k+** personal Whatsapp messages, with my messages as labels and the replier's as prompts
- Efficiently **fine-tuned** a **Llama 3 8B** Instruct model using the **Q-LoRA** technique for optimized performance
- Successfully converged the model, achieving accurate mimicking of user responses and a loss reduction of **80%**

Advanced Chess Bot Development and Optimization | *Clementine* | Self-Project

[Jan '23]

- Developed advanced algorithms like **Minimax** and **Alpha-Beta pruning** to optimize bot's decision-making
- Integrated AI techniques and **heuristic evaluations** to enhance strategic thinking and move selection of bot
- Conducted extensive testing and **continuous refinement**, resulting in a **50%** improvement in it's performance

POSITIONS OF RESPONSIBILITY

AI-phabet Mentor | WiDS 3.0, Analytics Club, IIT Bombay

[Dec '23 - Jan '24]

- Mentored **10+** students through hands-on training with **EMNIST dataset**, **Numpy**, **Pygame** & **OpenCV**
- Designed a project on making a live **OCR** model with Numpy, and UI for real-time predictions of drawn inputs
- Led the team in developing a **gesture detection** app for hand gesture drawing and integration for live outputs

Web and Tech Coordinator | Mood Indigo, IIT Bombay

[Nov '22 - Dec '22]

52nd Edition of Asia's Largest College Cultural Festival | Footfall: 1,46,000+ | Events 240+

- Actively involved in coordinating various events for Mood Indigo and managing of Mood Indigo's web portals
- Assisted in implementing the design layouts in **XML** and built app functions in **Java** using **Android Studio**

Web Coordinator | AZeotropy, IIT Bombay

[Aug '22 - Dec '22]

India's Largest Intercollegiate Chemical Engineering Symposium | Footfall:12K+ | Reach:52k+

- Utilized knowledge in **HTML**, **CSS** and **JavaScript** for front-end and **Django** for back-end web development
- Helped in revamping of old website by providing innovative ideas and utilizing skills in front-end and back-end

TECHNICAL SKILLS

- Programming Languages:** Java, Python, C++, HTML, CSS, Javascript, XML, MATLAB
- Libraries/Frameworks:** Tensorflow, Pygame, Pytorch, OpenCV, Pandas,Numpy,Matplotlib, LLaMAINdex

EXTRACURRICULAR ACTIVITIES

- Secured **2nd** place in **Inter-department Chess Tournament** conducted by IITB Chess Club [2022]
- Participated and represented IIT Bombay in **All India Chess League** Inter-College Tournament [2021, '22]
- Completed a year-long training for learning **Keyboard** under **National Sports Organization** [2022]
- Mentored **5+** students at **SoC IITB** in making a Reinforcement Learning trained Flappy Bird Bot [2024]
- Won a Merit trophy in a Mental Arithmetic **State level competition** conducted by **UCMAS** [2013]
- Won a **silver medal** in a school-level English Olympiad of the **Science Olympiad Foundation** [2016]