Bharat Kaurav

Roll No.:220001017
B.Tech
Computer Science and Engineering
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EDUCATION

Degree/Certificate	Institute/Board	CGPA/Percentage	Year
B.Tech. CSE	Indian Institute of Technology Indore	8.36 (Current)	2022-Present

EXPERIENCE

- **Machine Learning Engineer** *Nov. 2024 - Apr. 2025*
  unstudio.ai / ML Research & Development Gurgaon, India
  – Engineered a product visualization pipeline using **FLUX LoRA**, benefiting **2000+ customers** with improved user experience and image quality
  – Designed **distributed training setup** with Redis, Pub-Sub distributed communication system, error handling, and CI/CD workflows. Currently working on making server-less web app.
- **Research Intern** *Jul. 2023 - Present*
  Language and Information Processing Group (LIPG), IIT Indore Indore, India
  – Created a 5000+ image dataset using **DINOv2 and SAM** for automated segmentation mask generation
  – Achieved **SOTA classification accuracy of 96%** using **ECA**, **SAM**, **hybrid CNN-Transformer architecture, frequency feature interaction, reverse attention harmonization** and more with **paper** currently **under review**
- **Machine Learning Intern** *Jun. 2024 - Oct. 2024*
  Styldod Inc. / ML Research Team Bangalore, India
  – **Enhanced inference speed** of diffusion models by **50%** using Onediffusion, Stablefast, etc. achieving **30% GPU usage reduction**. **Correcting implementation and deployment** of their flagship object remover model.
  – Constructed scalable pipeline for gathering images with quality checks and labeling. Tested with **300k images**

PROJECTS

- **Dribble Clone** *Sep. 2024*
  Hobby Project Github
  – Built a full-stack Dribbble clone using Next.js, GraphQL, TypeScript, and Next Auth, featuring complete project sharing functionality and Google OAuth integration
  – Implemented modern UI with Tailwind CSS, featuring portfolio profiles, project management, and cloud-based image handling via Cloudinary and Grafbase
- **Hostel room allocation and mess management website** *Jan. 2024 - May. 2024*
  IITI Student Affairs Office Github
  – Developed a Django and Vanilla JS-based mess and hostel allocation system for IITI Academic Office, streamlining student and staff management processes
  – Engineered complete full-stack solution with comprehensive documentation, independently handling system design, implementation, and security measures
- **Facial recognition and detection based attention system** *Aug. 2023 - Nov. 2023*
  Prof. Chandresh Maurya Github
  – Led development of an automated attendance system using facial recognition and deep learning, collaborating with a 3-member team to implement advanced image segmentation techniques
  – Optimized model performance and automated email reporting system with CSV record maintenance

Other Projects: Kanji Diffusion Model; Genetic Algorithm for Slime Volleyball game; LLM Debate system; Face Recognition Based Attendance System; Dribble Clone

TECHNICAL SKILLS

- **ML/DL**: PyTorch, Transformers, Diffusers, BitsandBytes, PEFT, TRL, OpenCV, ComfyUI
- **Cloud & MLOps**: Docker, AWS, GitHub CI/CD
- **Development**: Python, C/C++, Django, FastAPI, React, Next.js

KEY COURSES TAKEN

- **Mathematics**: Linear Algebra and ODE analysis, Complex Analysis, Discrete Maths, Numerical Methods
- **Computer Science**: Database and Information Systems, Data Structure and Algorithms, Automata: Theory of Computation, Software Engineering, Operating System, Parallel Computing, System Architecture

ACHIEVEMENTS

- **Bronze Medal**, 12th Inter IIT Tech Meet, Adobe's Behaviour Simulation Challenge, IIT Madras *2023*
- **Gold Medal**, IITI Summer of Code, CyberSecurity category *2023*
- **All India Rank 1083**, JEE Advanced 2022 among 150k+ students *2022*
- **All India Rank 5995**, JEE Mains 2022 among 1M+ students *2022*
- **Top 300 finalist**, India's International Physics Olympiad 2022 delegation *2022*
- **All India Rank 9**, UCMAS Abacus Competition *2017*