ABHAY PRABHAKAR

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Professional Summary

Passionate AI/ML engineering student with strong expertise in Python, JavaScript, and C/C++. Experienced in machine learning frameworks including TensorFlow and PyTorch, with practical applications in computer vision and NLP. Demonstrated leadership through club activities and real-world project implementations. Published researcher with hands-on experience in AI development and web technologies. Enthusiastic about astrophysics, astrophotography, and continuous learning in emerging technologies.

Sep 2023

Education

BMS Institute of Technology and Management, Bengaluru   **Sep 2023 – Present**

B.E, Artificial Intelligence and Machine Learning

CFAL India, Mangalore   **Aug 2021 – Aug 2023**

Pre University Course, PCMCs

Technical Skills

Programming Languages: Python, JavaScript, C/C++, Java, HTML/CSS, SQL
Frameworks & Libraries: TensorFlow, PyTorch, React.js, Node.js, Express.js, Flask, Django
Machine Learning: Computer Vision, Natural Language Processing, Deep Learning, Neural Networks
Tools & Technologies: Git, Docker, AWS, MongoDB, PostgreSQL, Jupyter, VS Code
Specializations: AI/ML Model Development, Full-Stack Web Development, Data Analysis

Key Achievements

- AI/ML undergraduate at BMSIT&M with a passion for computer vision and NLP and a publication in the 2025 COMP-SIF international conference.

- Developed innovative projects including EchoAi for customer support automation, a personalized AI Travel Planner, and the AstroArchive astrophotography platform.

- Leadership experience as Vice President of the Br[AI]nium Club, Webmaster at IEEE CIS, and practical industry experience as an AI & ML Intern at Aviratha Labs.

- Strong foundation in machine learning algorithms, deep learning architectures, and full-stack web development with modern frameworks.

Publications

- "AI-Driven Brain Tumor Segmentation: Innovations, Constraints and the Path Toward Clinical Adoption" - COMP-SIF International Conference 2025

Experience

Aviratha Digital Labs   **June 2024– August 2024**

AI & ML Intern   *Remote*

- Developed and implemented machine learning models for real-world applications using Python and TensorFlow
- Collaborated with cross-functional teams to integrate AI solutions into existing systems
- Conducted research on computer vision techniques and natural language processing algorithms
- Optimized model performance and reduced inference time by 25% through efficient architecture design

Br[AI]nium Club, BMSIT&M   **September 2023– Present**

Vice President   *Bengaluru, India*

- Led a team of 50+ members in organizing technical events and workshops on AI/ML topics
- Coordinated with industry professionals to conduct guest lectures and technical seminars
- Managed club activities including hackathons, coding competitions, and project showcases

IEEE Computational Intelligence Society, BMSIT&M · **January 2024– Present**

Webmaster · *Bengaluru, India*

- Designed and maintained the society's website using modern web technologies
- Implemented responsive design and optimized user experience for mobile and desktop platforms
- Managed digital content and online presence for technical events and workshops

Projects

AstroArchive - Astrophotography Image Catalog System | **github.com/abhayprabhakar/AstroArchive**

- Comprehensive open-source platform addressing the gap in astrophotography data management beyond social media limitations
- Supports complete imaging dataset uploads including light, dark, flat, dark flat, and bias frames with rich metadata extraction
- Features session-based organization, celestial object tracking, collaborative post-processing, and user management system
- Built with modern full-stack architecture supporting both self-hosted and cloud deployment options

EchoAi - AI-Powered Voice Customer Support System | **github.com/abhayprabhakar/EchoAi**

- Revolutionary voice-enabled customer support system integrating Speech-to-Text, Large Language Models with RAG, and Text-to-Speech technologies
- Implements Retrieval-Augmented Generation using custom documentation (PDF/CSV) for context-aware, intelligent responses to customer queries
- Features complete conversational pipeline: voice input $\rightarrow$ STT $\rightarrow$ LLM processing with RAG $\rightarrow$ TTS $\rightarrow$ voice output for seamless interaction
- Dockerized microservices architecture with RESTful APIs (/llm, /tts, /stt) enabling scalable deployment from small businesses to enterprise solutions

AI Travel Planner - Intelligent Travel Itinerary System | **github.com/abhayprabhakar/AI-Travel-Planner**

- Full-stack web application generating personalized travel itineraries using AI-powered language models and real-time data integration
- Integrates SerpApi for live flight and accommodation data retrieval, combined with Groq API for intelligent itinerary generation
- Features day-wise travel planning, flight search functionality, accommodation recommendations, and AI-powered activity suggestions
- Built with Python Flask backend, responsive Bootstrap frontend, and SQLite/PostgreSQL database for comprehensive travel planning