BHAMIDI SAI PRANAY

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Kakinada, Andhra Pradesh - 533006, INDIA

OBJECTIVE

Final-year BTech Computer Science student at NIT Patna with hands-on research and development experience in Artificial Intelligence, NLP, and agentic systems. Worked on multi-agent LLM frameworks, EEG-based emotion classification, and keyword-guided abstractive summarization; seeking MS in Artificial Intelligence (Fall 2026).

EXPERIENCE

- **PY Headhunters [🌐]** *May 2024 - August 2024*
  Intern Bangalore, India
  - Engineered a full-stack web application backend for sustainable footprint management, handling data processing and API integration using Node.js and MongoDB
  - Integrated React.js frontend with Node.js backend to deliver a responsive, user-friendly platform for tracking and analyzing carbon footprint metrics
  - Collaborated in an Agile development environment with bi-weekly sprints, participating in code reviews and team standups to ensure timely project delivery
  - Researched sustainability frameworks and carbon footprint calculation methodologies to inform technical implementation decisions
- **NetoAI [🌐]** *May 2025 - July 2025*
  Intern Chennai, India
  - Architected and implemented a dynamic multi-agent orchestration framework using LangGraph and Mistral-7B, replacing brittle keyword-based logic with an LLM-driven intelligent router for improved decision accuracy
  - Developed three specialized agent workflows: Campaign Analytics Agent (CAA), Lead Optimization Agent (LOA), and Engagement Strategy Agent (ESA), automating end-to-end marketing campaign analysis and generating actionable recommendations
  - Built a Flask backend integrating HubSpot's REST API to ingest real-time campaign data from 100+ marketing properties, transforming raw JSON into structured formats optimized for LLM processing
  - Designed conditional LLM-gating logic to chain CAA to LOA to ESA workflows sequentially, enabling adaptive campaign optimization without manual intervention or hardcoded rule modifications

EDUCATION

- **National Institute of Technology Patna** *2022 - 2026*
  Bachelor of Technology Patna, India
  - GPA: 7.93/10.0
- **Narayana English medium school** *2020 - 2022*
  Central Board of Secondary Education Visakhapatnam, India
  - Percentage: 91.5
- **Narayana High School** *May 2020*
  Central Board of Secondary Education Visakhapatnam, India
  - Percentage: 87

PROJECTS

- **EEG-Based Emotion Classification using DEAP Dataset (Research Project)** *2025*
  Technologies: Python, MNE, scikit-learn, PyTorch, t-SNE, SVM, Random Forest, 1D-CNN, BiLSTM, Mistral LLM, Matplotlib
  - Conducted a comprehensive comparative study of **Machine Learning (ML), Deep Learning (DL), and Large Language Model (LLM)** approaches for classifying valence, arousal, dominance, and liking from EEG signals.
  - Designed an optimized preprocessing pipeline for the DEAP dataset, including baseline removal, window segmentation, feature extraction (band power & Hjorth parameters), and z-score normalization, yielding **70.5% accuracy** with Random Forest.
  - Implemented and evaluated **1D-CNN** and **BiLSTM** architectures on raw EEG segments to analyze generalization vs. overfitting; observed CNN outperforming LSTM by 4–5%, validating network depth constraints for small EEG datasets.
  - Experimented with **Mistral LLM (via Ollama)** as a zero-/few-shot classifier using feature-to-text prompt engineering; demonstrated interpretability potential despite limited accuracy (~55–60%), establishing groundwork for future hybrid EEG–LLM systems.
  - Submitted research findings to the **Jordan Journal of Electrical Engineering** for peer review, demonstrating rigorous academic methodology and contribution to the field.

- **Keyword-Guided Abstractive Summarization using Prompt Engineering (Research Project)** *2024–2025*
  Technologies: Python, HuggingFace Transformers, spaCy, TF-IDF, KeyBERT, DeepSeek LLM, ROUGE, BERTScore, Colab, CUDA
  - Designed a hybrid keyword extraction pipeline combining NER, TF-IDF weighting, and embedding-based similarity to identify salient content.
  - Implemented keyword-guided hard prompting to improve content focus and reduce factual inconsistencies in abstractive summaries.
  - Applied a two-phase fine-tuning strategy for BART, transitioning from oracle (ground-truth) keywords to predicted keywords to better match inference-time conditions.
  - Fine-tuned BART on approximately 11K keyword-augmented samples using the HuggingFace Trainer with GPU acceleration.
  - Evaluated the model using ROUGE and BERTScore, observing improved relevance and factual alignment compared to unguided baselines.
- **RT Marine Consulting – Corporate Website & Admin Panel (Freelance Project)** *2025*
  Technologies: Next.js, React, Tailwind CSS, Node.js, MongoDB, NextAuth, Vercel, GoDaddy DNS, SEO Optimization, Google Analytics [🔗]
  - Developed and deployed a modern corporate website for RT Marine Consulting, a Dubai-based marine engineering firm, using **Next.js** for SSR/SSG and React + Tailwind CSS for responsive design.
  - Built a secure **admin panel** with role-based authentication (NextAuth + MongoDB), enabling dynamic content management and eliminating hardcoded updates.
  - Delivered a fully localized **Turkish version** of the site by cloning the layout and integrating translated hardcoded fields, extending the company's international reach.
  - Configured domain/hosting (GoDaddy & Vercel), applied SEO best practices, and integrated Google Analytics for traffic monitoring.
- **Protect+AI: [Automatic Number Plate Recognition (ANPR) Module]** *2024-2025*
  Tools: Python, OpenCV, NodeJS, MongoDB, Canny Edge Detection, Tensorflow, Keras [🐙]
  - Developed a CNN-based character recognition model using TensorFlow and Keras, achieving accurate detection of alphanumeric characters from vehicle number plates across varied lighting and angle conditions
  - Implemented Canny edge detection and contour analysis algorithms with OpenCV to automatically identify and extract license plate regions from images with 90%+ detection accuracy
  - Built an image preprocessing pipeline including grayscale conversion, noise reduction, and adaptive thresholding to optimize plate recognition performance
  - Engineered a NodeJS backend with MongoDB integration for real-time plate verification against a database of registered vehicles, enabling efficient data validation and automated security checks

Skills

- **Programming Languages:** Python, JavaScript, C, Java, Kotlin
- **Machine Learning & Deep Learning:** PyTorch, TensorFlow, Keras, Scikit-learn, NumPy, Pandas, Matplotlib, SVM, CNN, LSTM, Neural Networks
- **AI & NLP:** HuggingFace Transformers, BERT, GPT, LangGraph, Prompt Engineering, Fine-tuning, Abstractive Summarization, Keyword Extraction
- **LLMs & Agentic Systems:** Mistral AI, CrewAI, Multi-Agent Orchestration, Conversational AI, RAG Systems
- **Computer Vision:** OpenCV, Image Preprocessing, CNNs, Object Detection
- **Web Development:** React, Next.js, Node.js, Express, HTML/CSS, MongoDB, MySQL, REST APIs
- **Research & Analysis:** Experimental Design, Data Analysis, Model Evaluation (ROUGE, BERTScore), Academic Writing, Literature Review, Statistical Analysis
- **Tools & Platforms:** Git, Google Colab, CUDA, Vercel, AWS (learning), Jetpack Compose

Certifications

- **DeepLearning.AI (Coursera):** Advanced Learning Algorithms *2026*
- **DeepLearning.AI (Coursera):** Supervised Machine Learning: Regression and Classification *2025*
- **IBM (Coursera):** Fundamentals of AI Agents Using RAG and LangChain *2025*
- **Udemy - Zoltan C.Toth:** The Local LLM Crash Course (Building AI Chatbot) *2024*
- **Google (Coursera):** IT Automation using Python *2024*

Leadership Experience

- **Design Coordinator** *2023 - Present*
  Science and Environmental Club, NITP
  - Led design team for campus events, guiding team members to create impactful visual content and posters
- **Design Lead** *2024*
  Robotics Club, NITP
  - Managed design team to create promotional materials for technical events organized by the club
- **Treasurer** *2024*
  Saptak - Music Club, NITP
  - Managed financial operations, budget planning, and fund allocation for club events and equipment acquisition

Volunteer Experience

- **Organizer** *December 2025*
  Taraang - Multi Cultural Fest, NITP
  ◦ Organized musical events and competitions, managing registrations and ensuring smooth event execution

- **Designer** *October 2023*
  Treasure Hunt Event, Desco Design Club
  ◦ Created themed visual designs that attracted significant campus-wide participation and attention

Professional Memberships

- **IEEE Student Member** (ID: 100485449) *August 2024*

Additional Information

Languages: English (IELTS 7.5), Hindi (Fluent), Telugu (Native)
Interests: Singing, Playing Piano, Badminton, Graphic Designing, Reading Books

References

1. **Dr. Jyoti Prakash Singh**
   Associate Professor, Computer Science and Engineering
   National Institute of Patna
   Email: jps@nitp.ac.in
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   Relationship: Project Supervisor Academic Instructor

2. **Dr Somaraju Suvvari**
   Assistant Professor, Computer Science and Engineering
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   Relationship: Project Supervisor, Academic Instructor