

# BHARAT MISHRA

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Computer Science student specializing in Artificial Intelligence with a foundation in building end-to-end systems. Proven ability to engineer custom Reinforcement Learning environments from scratch and deploy Generative AI tools to solve real-world data extraction problems. Eager to apply these skills to tackle challenges in autonomous systems and NLP.

## EDUCATION

- **Bachelor of Technology, VIT Bhopal University** | Computer Science Engineering | **CGPA: 9.13** [2023 - 2027]
- **Grade XII, Vidyatree Modern World School** | Percentage: 95.50 [2021 - 2023]

## TECHNICAL SKILLS

- **Programming Languages:** C/C++, Python, Java, SQL
- **AI/ML Libraries & Frameworks:** Tensorflow, Scikit-learn, Pandas, Matplotlib, PettingZoo, Streamlit, OpenAI Gym
- **Developer Tools:** GitHub, Git, MySQL, Docker

## AI & Machine Learning Projects

- **DepoIndex: AI-Powered Legal Document Indexing**
  - Engineered an AI-powered tool to automate the generation of a table of contents from legal deposition PDFs, significantly reducing the manual effort required for document analysis.
  - Designed an efficient preprocessing pipeline that annotates text with precise page and line numbers, minimizing prompt token count while enabling the LLM to extract topics with accurate source references.
  - Achieved **95% page-level and 85% line-level accuracy** in topic referencing through manual validation, delivering a highly reliable tool for automated document indexing.
- **Search and Rescue Reinforcement Learning System**
  - Developed autonomous agents using Q-learning and PPO to optimize pathfinding in a dynamic, multi-agent search and rescue simulation.
  - **Engineered the simulation environment and its core physics from scratch**, defining the complete state space, action space, and reward functions for the RL agents.
  - Achieved an approximate **90% reduction in target search time** for the trained agent compared to a random-walk baseline.
- **MSMEs E-Commerce Platform with Integrated AI**
  - Engineered an AI-driven fraud detection model using RandomForest classifiers, achieving **87% accuracy** by analyzing transaction patterns, IP geolocation, and billing/shipping address mismatches
  - Built a sales forecasting model using a TensorFlow neural network to predict inventory needs, achieving **90% accuracy** by analyzing historical monthly sales data to identify seasonal shifts.
- **CyberSecurity AI Web Extension for Child Safety**
  - Developed an AI-powered browser extension that detected malicious links with **85% accuracy** as part of a competitive, **state-level Police CyberSecurity Hackathon** focused on child safety.

## Achievements & Certifications

- **Global Rank 8261, TCS CodeVita (2024):** Advanced to the penultimate round in a global coding competition by solving complex algorithmic problems.
- **Generative AI Training (Kaggle/Google):** Completed an intensive program on LLMs, prompt engineering, and transformer architecture, earning a Kaggle-issued badge for proficiency.

## Leadership and Volunteering

- **PR and Outreach Lead, Startup Club:** Secured industry partnerships for guest lectures and sponsorships by coordinating directly with C-suite executives (CEOs, CFOs) and other industry professionals.
- **Volunteer, Pahal Foundation:** Taught basic mathematics and fundamental elementary education to underprivileged children.