NITISH KUMAR GUPTA
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PROFILE SUMMARY:

- AI Engineer with a Bachelor of Technology in Artificial Intelligence and Machine Learning, skilled in **machine learning algorithms**, **deep learning architectures**, **computer vision**, **data preprocessing**, **model development**, and **optimization**.
- Proficient in Python, TensorFlow, PyTorch, OpenCV, and ROS2, with hands-on experience in model deployment, Generative AI, and building end-to-end AI-driven solutions for real-world applications.

CERTIFICATION:

- AI for Everyone: Master the Basics
- Introduction to Data Science
- Python Basics for Data Science
- Deep Learning Fundamentals with Keras

TECHNICAL SKILLS:

- **Programming Languages:** C, C++, Python
- **Artificial Intelligence & Machine Learning:** Artificial Intelligence, Machine Learning, Deep Learning (CNN, RNN), Computer Vision, Natural Language Processing (NLP), Generative AI (GenAI)
- **Frameworks & Libraries:** TensorFlow, PyTorch, Keras, OpenCV, scikit-learn, NumPy, Pandas, Matplotlib, Seaborn, SciPy, Flask, rclpy
- **Data Science & BI Tools:** Power BI, Jupyter Notebook
- **Developer Tools:** VS Code, Dev C++, Git
- **Robotics & Simulation:** ROS2, Gazebo, Raspberry Pi 5

SOFT SKILLS:

- Communication
- Teamwork and Collaboration
- Problem Solving

PROJECTS:

Current Project

1. **Intelligent Question Generator (NLP):**

Project Brief: Developed a **Streamlit-based NLP application** that automatically generates questions from input text using **LLaMA**. The system supports multiple question formats such as **MCQs**, **fill-in-the-blanks**, **true/false**, and **short-answer** types. It also integrates WordNet-based distractor generation and difficulty classification to enable customizable assessments.

- **Technologies**: Python, Streamlit, LLaMA, NLP, WordNet, Transformers, PyTorch.
- **Role**: AI Developer, NLP Engineer.
- **Responsibilities**: Independently designed and implemented the complete system architecture, developed the question generation pipeline, integrated LLaMA for text understanding, built the Streamlit interface, and optimized model performance for accurate and adaptive question creation.

Previous Project

2. **Multilingual Translation App:**

Project Brief: A Self-built **Streamlit-based web application** for **real-time multilingual translation** using NLLB-200. The system enables translation across **20+ languages** with interactive user input and an intuitive interface for selecting source and target languages, ensuring seamless multilingual communication.

- **Technologies:** Python, Streamlit, NLLB-200, Transformers, NLP, PyTorch.
- **Role:** Individual Project / Developer.
- **Responsibilities:** Designed and developed the complete translation pipeline using NLLB-200, built an interactive UI in Streamlit, implemented real-time text processing and translation, and optimized the application for speed and usability across multiple languages.

3. **Pothole Detection (Computer Vision):**

Project Brief: Developed a **computer vision system** for **real-time pothole detection** using a **Raspberry Pi with a camera** mounted on a vehicle dashboard. The system captures road images as the vehicle moves across cities, detects potholes, and maps their GPS coordinates. The collected data can be visualized in Power BI Desktop for actionable insights and city-level road monitoring.

- **Technologies**: Python, OpenCV, PyTorch, Raspberry Pi, GPS module, Data Augmentation, Power BI.
- **Role**: Computer Vision Engineer.
- **Responsibilities**: Trained and optimized computer vision models for pothole detection, implemented detection algorithms, integrated the model on Raspberry Pi for real-time deployment, and contributed to data preprocessing, augmentation, and visualization for accurate mapping and monitoring.

Academic Project

4. **Ringo Robot (Autonomous Navigation):**

Project Brief: Developed a **team-based autonomous robot project** to navigate a simulated environment while avoiding obstacles using LiDAR sensor data. The robot was simulated in **Gazebo** and controlled with **ROS2**, enabling real-time environment scanning, object detection, and dynamic path planning for smooth navigation.

- **Technologies**: ROS2, Gazebo, Python/C++, LiDAR, Sensor Integration.
- **Role**: Computer Vision/Robotics Engineer (Team of 4).
- **Responsibilities**: Integrated LiDAR sensor into the virtual robot, implemented obstacle detection algorithms, developed path-planning logic to avoid collisions in real-time, and collaborated with team members to ensure seamless communication between ROS2 nodes.

INTERNSHIP:

Computer Vision Intern | Codenscious.ai, Indore (MP)
July 2024 – October 2024

- Gained hands-on experience in **data cleaning**, **augmentation**, and **annotation**, improving dataset quality for computer vision projects.
- Worked with **computer vision models**, focusing on **training**, **evaluation**, **and optimization** for efficient deployment.
- Collaborated on projects to enhance model accuracy and performance for real-world applications.

EDUCATION:

Bachelor of Technology (B.Tech) in Artificial Intelligence & Machine Learning
Indore Institute of Science and Technology, Indore, India | **CGPA:** 7.66 | 2021 -2025

Higher Secondary Education (Class 12)
D.K. College, Dumraon, Bihar (B.S.E.B) | **Percentage:** 78.8% | 2017 - 2019

Secondary Education (Class 10)
High School, Chaugain, Buxar, Bihar (B.S.E.B) | **Percentage:** 72% | 2016 - 2017