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## Ashutosh Verma

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### PROFILE

**AI Developer and Full-Stack Programmer** proficient in **Python, JavaScript, and the NVIDIA AI Stack**. Proven ability in production-grade AI deployment, reinforced by an intensive **40-hour GRIL Training Session**. Expertise includes training models on **NVIDIA DGX Servers** and optimizing performance using **TensorRT**. Experienced in developing full-stack applications, specifically for academic testing and event management systems.

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### Education

October 2023 – October 2027

Bachelor of Technology, ABESIT

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### SKILLS

- AI & Computer Vision: Object Detection, Semantic Segmentation (U-Net, Vision Transformers), Custom Dataset Creation.
  - NVIDIA AI Stack: DGX Server Management, TensorRT Optimization, Triton Inference Server, NVIDIA NIM, Jetson Nano.
  - Tools: Git/GitHub, Linux CLI, Annotation Tools, E-mail Automation.
  - MLOps & DevOps: Docker Containerization, Kubeflow, Vector Databases, RAG (Retrieval-Augmented Generation).
  - Full-Stack Development: Python (Flask/Django), HTML5, CSS3, JavaScript (ES6+), Streamlit
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### PROJECTS

#### SPECIALIZED AI & MLOPS PROJECTS

##### 1. Lane Violation Detection & Recognition System

- Developed an end-to-end computer vision pipeline for traffic monitoring using Python.
- Implemented **Object Tracking** and integrated **E-mail Automation** for real-time violation alerts.
- Deployed the system on **NVIDIA DGX Servers** using **Docker containerization** for high-performance scaling.

##### 2. Medical Image Segmentation (Vision Transformers)

- Built and compared baseline **CNN (U-Net)** models against **Vision Transformers (ViT/Swin-Unet)** for medical imaging.

- Conducted model training, hyperparameter tuning, and performance analysis using Dice coefficients.
- Deployed the final segmentation model on a **DGX production environment**.

### 3. AI Data Retrieval & Recommendation System (Speech AI)

- Architected a **RAG (Retrieval-Augmented Generation)** system using **Vector Databases** for efficient data fetching.
  - Integrated **NVIDIA NIM (Inference Microservices)** and Speech AI systems into a cohesive application.
  - Designed a custom user interface using **Streamlit, HTML, and CSS** for interactive user engagement.
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## FULL-STACK COLLEGE PROJECTS

### 1. Planify: Event Manager

- Engineered a web-based platform to manage college events, registrations, and scheduling.
- Developed a responsive frontend using **HTML, CSS, and JavaScript** and a **Python** backend for data persistence.

### 2. Quizomania: Academic Quiz Platform

- Created a digital testing suite for college subjects, allowing for quiz creation and automated grading.
  - Implemented dynamic quiz logic using **JavaScript** and secure score tracking with **Python**.
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## CERTIFICATIONS & TRAINING

### GRIL Specialized Training (Odd Semester 2025-2026)

- Completed **40 hours** of teaching and hands-on laboratory work focused on the NVIDIA GPU Platform.
- Mastered the deployment of object detection models on **Triton Servers** and **Jetson Nano** edge devices.
- Consistently passed "Brush Up Quizzes" on advanced AI infrastructure and container runtime.