KOMAL SRIVASTAVA

+91 8509904164 | Asansol, West Bengal

Email- komalsrivastava118@gmail.com | **LinkedIn -** Komal Srivastava | **GitHub -** Komal Srivastava

Education

Bachelor of Technology, Computer Science	**September 2022 – Present**
VIT Bhopal University	

12th Standard	**April 2020 – March 2021**
Higher Secondary Examination	
St. Mary Goretti Girls High School	

10th Standard	**April 2018 – March 2019**
Secondary Examination	
St. Mary Goretti Girls High School	

Skills

- **Languages:** Python, Java, HTML5, CSS3, JavaScript
- **Backend & Databases:** PostgreSQL, RESTful APIs
- **Libraries:** NumPy, Pandas, Matplotlib, Seaborn, Scikit-learn, Pickle, Flask, React
- **Frameworks:** Express.js, Django, Tailwind CSS

Projects

Smart Traffic Management System   **April 2025 – June 2025**
- Engineered an IoT-enabled traffic optimization system using **Raspberry Pi, Python, and OpenCV**; processed real-time video feeds to calculate vehicle density and dynamically adjust signal timings, improving **traffic flow efficiency by 35%** at simulated intersections.
- Deployed a **YOLOv5 object detection model** for real-time vehicle recognition, integrated with **MQTT protocol for low-latency data transmission** between edge devices and the central dashboard.
- Built an analytics dashboard using **Flask and Chart.**js to monitor traffic data trends, emergency vehicle prioritization, and congestion hotspots; validated the system through field simulation **achieving ~92% detection accuracy.**

Virtual Learning Platform – EduConnect   **Jan 2025 – March 2025**
- Developed a responsive full-stack **learning management system (LMS) using Django, PostgreSQL, and React.js**, enabling students and instructors to manage classes, assignments, and progress tracking in real time.
- Implemented user authentication with **Django REST Framework and JWT**, and role-based views for admin, teacher, and student interfaces; **integrated WebSocket-based live chat** for peer and instructor interaction.
- Designed a recommendation engine using **cosine similarity and user-based collaborative filtering** to suggest personalized learning paths and resources, **increasing user engagement by 40% during user testing.**

Portfolio Website with Admin CMS   **Sep 2024 – Dec 2024**
- Built a professional, **SEO-optimized portfolio website** with a custom-built **Content Management System (CMS)** using **Next.js and Sanity.io**; designed the UI with **Tailwind CSS and Framer Motion** for smooth animations and fast rendering.
- Created dynamic routes for **blog posts, project pages, and testimonia**ls, fully integrated with the **CMS backend to enable non-developer updates** via structured content blocks.
- Enhanced site performance with **ISR (Incremental Static Regeneration) and lazy loading**; achieved **100/100 on Lighthouse performanc**e and accessibility audits, and deployed via **Vercel with GitHub integration for CI**.

Certifications & Achievements

- **Certificates:**
    - Full Stack MERN Developer – SmartBridge
    - Generative AI with IBM WatsonX – IBM
    - The Bits and Bytes of Computer Networking – Google
    - NPTEL Cloud Computing (Elite + Silver Badge)
    - NPTEL Marketing Analysis (Elite Badge)

- **Achievements:**
    - Top 10 Finalist – CodeBrew Hackathon by DevSoc BITS Goa
    - First Runner-Up – TechNova Hack by IEEE VIT Bhopal
    - 2nd Round Qualifier – AlgoHive Coding Contest by HackerPod
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