Shardul Rana

+91 9997572707 | Email- shardulrana3010@gmail.com | LinkedIn - Shardul Rana | GitHub - Shardul Rana

EDUCATION

Bachelors in Computer Science Vellore Institute of Technology – 9.05	**Sep 2022 – Present**
Class XII: Doon International School (CBSE) – 88.8%	**Apr 2020 – July 2021**
Class X: Summer Valley School (ICSE) – 94.8%	**Apr 2018 – May 2019**

SKILLS

- **Languages & Web:** Python, Java, JavaScript, SQL, HTML5, CSS3, React.js, Node.js
- **Backend & Databases:** MongoDB, MySQL, Mongoose, RESTful APIs, Flask
- **Data Science & ML:** Pandas, NumPy, Matplotlib, Seaborn, Scikit-learn, TensorFlow
- **Visualisation & Tools:** Git/GitHub, Postman, Jupyter, VS Code, Miro, Mural, PyCharm, IntelliJ, PowerBI
- **Libraries & Frameworks:** PyQt5, MobileNet V1, BeautifulSoup, Axios, React Router

PROJECTS

SHOPEZ – MERN Stack E Commerce application   GitHub
- Engineered a full-stack MERN application with secure user authentication, product CRUD, and cart logic, strengthening backend reliability and improving overall system stability.
- Optimized RESTful API performance using Node.js and MongoDB, achieving ~280–300ms response times and enhancing page load speed by 25% across core flows.
- Mapped system workflows and release planning using Miro and Mural, improving cross-team alignment and reducing feature delivery time by 15%.
- Strengthened authentication and session management using JWT and bcrypt, improving account security and reducing potential vulnerability risks.

TVDS – Real-time traffic violation monitoring system   GitHub
- Developed a MobileNet V1–based CNN using OpenCV and NumPy, reaching ~95% accuracy in detecting signal, parking, and directional violations.
- Built a PyQt5 monitoring interface with automated flagging and event logging, reducing manual review workload by ~50%.
- Enhanced SQL-based record management for 5,000+ entries, improving query performance and rule-based detection speed by ~20%.
- Designed a structured logging and monitoring module to track violations, system errors, and inference activity, improving debugging efficiency and auditability during live operation.

Retail Sales Analysis   GitHub
- Structured a MySQL database and validated the dataset by eliminating inconsistent records, improving data quality and analysis accuracy by ~20%.
- Created analytical SQL queries to evaluate revenue, customer demographics, and category-level trends, enabling 30% faster insight generation for business reporting.
- Applied window functions, CTEs, and CASE logic to uncover seasonal patterns and spending behaviour, supporting more precise forecasting and data-driven decision making.

CERTIFICATION & EXPERIENCES

SHOPEZ: E Commerce application – SmartBridge
- Implemented a MERN-based e-commerce application with authentication, cart management, and product handling features, strengthening end-to-end functionality and stability.
- Improved API throughput to ~280ms and documented component workflows in Miro and Mural, simplifying collaboration and accelerating development cycles.

DATA ANALYTICS – GOOGLE
- Analyzed large datasets using SQL, Google Sheets, and Power BI to build executive dashboards, enabling 25% better decision-making efficiency and 30% faster insight delivery.

PYTHON FOR DATA SCIENCE & AI – IBM
- Automated data pipelines using Python, NumPy, Pandas, and REST APIs in Jupyter, reducing manual processing time by 30%.

LEADERSHIP & ACHIEVEMENTS

- 2× National Math Olympiad Gold Medallist and secured 1st place in an Inter-School Spelling Bee among 50+ participants.
- Led 5+ creative projects and managed events with 200+ attendees and organised 3 hackathons.
- Contributed to a university project with Dehradun Police on traffic analytics.
- Qualified for Smart India Hackathon 2024 (Internal Rounds) with a civic-tech solution proposal.