

Sardar Vallabhbhai National Institute of Technology, Surat
Department of Civil Engineering

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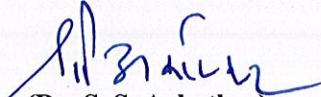
No. DoCE/PE/Advertisement/ **226** /2025-26

Date: 06/04/2026

Department of Civil Engineering is carrying out an externally funded research project, titled "**Safety Risk Analytics for Knowledge, Spatiotemporal Trend Analysis, Hotspot Detection, and Data-Driven Proactive Assessment**" sponsored by Gujarat Traffic Intelligence & Road Safety Platform (G-TRISP) under SPANDADN Project, Western Railway Ahmedabad. As per the requirement of this project, it is proposed to employ a **Project Engineers** on purely temporary contract basis for a period of '**Six Months**' which may be extendable up to the completion of the project. The qualification of the candidate should be as per the following requirement.

Sr. No	Designation	No. of Post	Qualification	Consolidate Monthly Remuneration/Salary
1.	Project Engineer-I	01	M.Tech / M.E. / M.Sc. (Transportation Engineering & Planning / Highway & Transportation Engineering / Transportation Engineering) Required Skills: Runs Analytics, Geocoding, Hotspot Detection	Rs.40,000/-
2.	Project Engineer-II	01	M.Tech / M. Sc. (AI/ML/Computer Science /Data Science) Required Skills: Builds Multi-Object Tracking Pipelines	Rs.50,000/-

Interested candidates are requested to remain present at their own cost with application on plain paper (with two Passport size photographs), Curriculum Vitae, original certificates of educational qualifications and experience, certificate for proof of birth date, Identity Proof and one set of photocopies (self-attested) of the documents on 28-04-2026 between 10:00 AM to 11:00 AM in the Seminar Room of Department of Civil Engineering (Wing-A) at SVNIT Campus.


(Dr. S. S. Arkatkar)

Professor & Principal Investigator

प्राध्यापक/Professor
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Head of the Department, DoCE

विभागाध्यक्ष/Head
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Research Project Details:

1. The main aim of the project is to develop an integrated platform for traffic intelligence and road safety by identifying crash-prone locations and potential risk zones using both reactive (crash-based) and proactive (conflict-based) approaches, thereby supporting data-driven decision-making for safer and sustainable transportation systems.
2. The project utilizes geospatial analysis and advanced data analytics techniques to process historical crash data, including digitization, cleaning, and geocoding of accident records. Statistical methods such as Kernel Density Estimation (KDE) and clustering algorithms are employed to identify and prioritize blackspots on urban roads and highway corridors.
3. Video-based traffic data collection is carried out using CCTV and/or drone systems at selected intersections and corridors. Computer vision techniques (YOLO-based object detection and multi-object tracking algorithms such as DeepSORT/ByteTrack) are used to extract vehicle trajectories, including position, speed, and movement patterns under heterogeneous traffic conditions.
4. Trajectory data are further utilized to compute surrogate safety measures. These measures help in identifying traffic conflicts (rear-end, crossing, lane-change, and pedestrian conflicts) and assessing safety risks without relying solely on historical crash data.
5. Based on the analysis outcomes, engineering interventions and roadway design improvements are proposed in accordance with IRC and MoRTH guidelines.

