

# PRAJWAL KARKI

+977 982-5942997 ♦ Sokedhara, Kathmandu, Nepal

[perfectprajwal1@gmail.com](mailto:perfectprajwal1@gmail.com)

## SUMMARY

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Civil Engineer with proven experience in traffic engineering, large-scale road condition assessment, geotechnical investigation, and stormwater design. Demonstrated ability to lead field operations, manage technical teams, and deliver accurate, data-driven engineering outputs using DGPS, GIS, and AutoCAD. Highly adaptable and results-oriented professional committed to excellence in multidisciplinary engineering projects.

## EDUCATION

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- **Tulas Institute, Uttarakhand Technical University, Dehradun, India** 2015-2021  
Bachelor's in Civil Engineering
- **Hari Ketan Multiple Campus, Jhapa, Nepal** 2013-2015  
HSEB Board (+2)

## ACADEMIC PROJECTS

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- Determination of strength of concrete block using admixture silica fume. Comprehensive testing to assess the reasonable strength of concrete blocks by incorporating silica fume as an admixture.
- Summer intern on *Secondary Towns Integrated Urban Environmental Improvement Project* - civil engineering works like design and construction of drainage and sewerage, as well as of pavement.

## WORK EXPERIENCE

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- **Assistant Engineer - (Runway Construction, Bhadrapur Airport)** Nov 2019 (10 days)  
Supported runway asphalt paving works as an Assistant Engineer, performing site supervision during centerline, threshold, and touchdown zone markings, and conducting level checks to ensure proper asphalt laying in accordance with design specifications.
- **Residential Building Project (Personal), Jhapa** Jun 2022 – Dec 2022  
Completed my first post-graduation project involving the planning and construction of a 1,800 sq. ft. residential building, gaining hands-on experience in quantity estimation, cost calculation, inventory management, and site supervision. Prepared structural and architectural drawings including isolated footings, beams, and columns, and conducted quality monitoring throughout construction.
- **Soil Test (P) Ltd.** Mar 2023 – Mar 2026

### Traffic Engineering

- **Traffic Count & Analysis 2023/2024 (170 Stations – NH, Feeder, and SURN )**: Led planning and scheduling of 72-hour CCTV traffic deployments across 170 locations on National Highways, Feeder Roads, and Strategic Urban Road Networks (SURN), coordinated field technicians and data logistics, supervised a 25-member counting team including attendance tracking, station data allocation, and day-to-day performance tracking to forecast and monitor data completion, managed large-scale video datasets on NAS storage, automated high-volume video processing using FFmpeg workflows,

performed quality assurance on traffic data, conducted multi-year vehicle-wise traffic analysis, and generated AADT maps using QGIS.

- **Traffic Count Survey 2024/2025 (Western Nepal – 100 Stations):** Implemented the field deployment of CCTV traffic count stations at 100 stations, organized the installation and movement of the stations to enable the collection of continuous 72-hour traffic data, arranged for local approval of the installation of equipment, managed the correct scheduling of operations and the return of equipment, monitored the performance of enumerators and performed quality control, analyzed traffic data sets using Excel, trained personnel on vehicle classification methods, and created traffic analysis maps for use in final reporting.

### **Pavement & Road Condition Assessment**

- **Surface Distress Index (SDI) Survey – Core Road Network (CRN, 2023/2024, ≈600 km):** Planned and organized survey routes for efficient coverage of Core road networks, performed pavement condition surveys using DGPS-enabled vehicles equipped with high-resolution video cameras, recorded synchronized road video and GPS information, processed survey videos in SDI software by defining the beginning and end chainage and "burning" chainage information into the video, calibrated grid-based graphics to estimate the distress area, distributed processed videos to enumerators for major and minor distress classification, exported chainage-specific distress information, verified spatial datasets, and offered supporting data for report generation such as condition rating maps, distress distribution statistics, and SDI outputs for pavement performance.
- **Surface Distress Index (SDI) Survey – Road Network Assessment (2024/2025, ≈6,000 km – NH, Feeder, SURN):** Carried out optimized field survey schedules for large road networks, performed pavement condition surveys using DGPS-enabled vehicles with high-resolution video cameras, recorded synchronized road videos and GPS, processed survey videos using SDI software by defining start and end chainage and burning chainage from GPS into video, calibrated grid-based visualizations to estimate distress areas, distributed processed videos to enumerators for distress identification and classification, exported chainage-specific distress data, carried out GIS mapping and validation of spatial data, and offered supporting data for report such as condition rating maps, distress distribution statistics, and SDI outputs for pavement performance.

### **Geotechnical Engineering**

- **Geotechnical investigation of soil on 132 kV Transmission Line for the project under Nepal Electricity Authority (NEA):**

Engaged in geotechnical field investigations with senior engineers, involving machine drilling using wash boring techniques, borehole logging, including soil strata identification and description, measurement of groundwater table levels, determination of soil conductivity, and field and laboratory tests including Standard Penetration Test (SPT), Dynamic Cone Penetration Test (DCPT), and soil resistivity tests, while assisting in soil sampling, handling core boxes, sample storage, mobilization of equipment, and borehole logging.

### **Transportation Survey**

- **Road User Satisfaction Survey (RUSS) – (Butwal–Gorusinghe–Chanauta Road Section):** Conducted pilot and full-scale road user satisfaction surveys, including pilot survey on Tikauli–Lothar road section and main survey on Butwal–Gorusinghe–Chanauta corridor, carried out large-scale field data collection with approximately 900 public interviews using structured questionnaires, engaged with government offices and local stakeholders regarding road conditions, and supported data processing, validation, and analysis for survey reporting.

## **Stormwater & Civil Design (Australia-Based Projects)**

### ***- Stormwater Drainage Design & AutoCAD Drafting:***

Served as lead for stormwater and civil drafting operations for international projects, managing daily job allocation and prioritization, coordinating team workflows, and adapting to dynamic project timelines. Prepared detailed civil and stormwater drawings including architectural plan cleanup, roof drainage layouts, catchment area analysis, on-site detention (OSD) design, and driveway sections using AutoCAD, ensuring accuracy, efficiency, and timely delivery of design outputs.

## **RELEVANT SKILLS**

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### **Computer Skills**

- Design and Drawing : AutoCAD, 2D Modelling
- Surveying Equipment : Total Station, Automatic Level, DGPS
- Remote Sensing and Mapping : QGIS, Google Earth
- Microsoft Office Suite : MS Word, Excel, PowerPoint

### **Leadership Skills**

- Led a 25+ member field team during the Traffic Count project, overseeing vehicle classification training, task allocation, progress tracking, and quality control.
- Coordinated technical workflows at Soil Test (P) Ltd., providing mentorship, guidance, and fostering a productive, collaborative environment for junior staff and interns.

## **PROFESSIONAL AFFILIATIONS**

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- **Nepal Engineering Council (NEC)**  
Registered Civil Engineer – Category 'A'

## **CONTACTS OF REFEREE**

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### **Er. Binod Bharati**

Team Leader – Major Road Engineering Projects, Nepal  
Professional Civil Engineer  
Phone: 9851078327