

Prashant Gautam

GRADUATE RESEARCH APPLICANT | MOUNTAIN TRANSPORTATION

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RESEARCH PROFILE

Civil engineer with field experience on mountain trail construction and related infrastructure projects in Nepal. My interest is in transportation systems that can be built, maintained and kept usable under steep terrain, intense rainfall and natural-hazard conditions. My site experience gives me a practical starting point for research on drainage, slope-related risks, terrain constraints and resilient access.

RESEARCH INTERESTS

MOUNTAIN TRANSPORTATION	Road and trail systems in steep terrain, with attention to constructability, maintenance and access.
DRAINAGE AND RUNOFF	Drainage measures, runoff control and infiltration approaches that work under difficult terrain and rainfall conditions.
HAZARD AND RESILIENCE	Transportation assets exposed to landslides, erosion, intense rainfall and changing climate conditions.
GIS AND TERRAIN ANALYSIS	Using spatial data to understand terrain, transportation assets and hazard exposure.

PROFESSIONAL EXPERIENCE

Civil Engineer — Project / Site Management

Dibyashwori Nirman Sewa · Aug 2025 – Present

- Work across irrigation, mountain trail and tourism-infrastructure projects.
- Handle site supervision, surveying, measurement, drawing checks, quantity records, billing support, quality checks and progress documentation.

Project-Based Civil Engineer

Institute of Engineering Consultancy Services (IOECS) · Oct 2025 – Jul 2026

- Contributed to detailed post-fire assessments covering 44 government buildings.
- Supported field investigation, NDT/SDT and material testing, damage classification, ETABS assessment, repair/retrofit recommendations, cost estimation and technical reports.

Group Leader — Seismic Resistant Design of Multi-Storied RCC Commercial Building

Academic Project · 2024 – 2025

- Led structural modelling, analysis, design, code-based detailing, documentation and presentation for a B+G+9 RCC building.

FIELD EXPERIENCE RELEVANT TO RESEARCH

- Mahabharat Trail: worked on alignment, drainage, masonry, soling, stairs and associated site works in mountainous terrain.
- Approximately 12,000 stairs: supported measurement, drawing checks, quantity records, billing and progress monitoring.
- Irrigation project: worked around canals, pipelines and hydraulic structures, gaining practical exposure to drainage, survey work and construction sequencing.
- Tourism infrastructure: supported site coordination and construction monitoring where access, site conditions and mixed civil/structural works affected delivery.

PROJECT DETAIL — MAHABHARAT TRAIL

The project involves trail alignment, drainage, masonry, soling, extensive stair construction and rest facilities in challenging terrain. My role is field-oriented: site measurement, construction monitoring, coordination, billing and progress documentation. The work has strengthened my interest in transportation infrastructure that must remain practical to construct and maintain in steep terrain.

PROJECT DETAIL — IRRIGATION & TOURISM INFRASTRUCTURE

Irrigation work has involved canals, pipelines and hydraulic structures, with surveying, site supervision, measurement, quality checks and contractor billing. Tourism infrastructure work has included park and parking development, flagstone paving, compound walls, a dharmashala with truss roof and large temple gates. Together, these projects provide practical exposure to access, drainage, construction sequencing and field constraints.

RESEARCH PREPARATION

My preparation combines field surveying and measurement with AutoCAD, SW-DTM, ArcGIS and Excel. I am particularly interested in research where field observations and spatial information can be translated into practical transportation decisions.

TECHNICAL METHODS & TOOLS

Total Station · Auto Level · Theodolite · GPS · AutoCAD · SW-DTM · ArcGIS · Advanced MS Excel

POTENTIAL RESEARCH QUESTIONS

- How can drainage and runoff control be designed for mountain trails where rainfall, slope and maintenance constraints interact?
- Which field and spatial indicators can help identify vulnerable sections of mountain transportation infrastructure?
- How can practical construction methods be linked with longer-term resilience and maintenance needs?

EDUCATION

Bachelor of Engineering in Civil Engineering · Pulchowk Campus, Institute of Engineering, Tribhuvan University

Academic project: Seismic Resistant Design of Multi-Storied RCC Commercial Building (B+G+9).

TRAINING, AFFILIATION & LANGUAGES

ADB-sponsored Road Slope Stability and Bio-Engineering — RCIP-AF TA-10113 NEP · Disaster Management Training — Armed Police Force (APF) Nepal · CESS-Nepal

Nepali — native · English — fluent · Hindi — understanding; limited spoken proficiency