

## **Karankumar A. Patel**

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### **PROFESSIONAL SUMMARY**

Dedicated and hardworking Civil Engineering graduate with a background in Structural Engineering, Construction Management and Forensic Structural Engineering looking for the job opportunity in field of civil engineering.

- Highly energetic and hardworking with the passion for continuous learning new areas.
  - Excellent communication skills with the ability to work in team as well as individually.
  - Skilled in using Softwares and Canadian Design Codes.
  - Ability to work flexible hours and travel (Possess Valid Driver's License)
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### **EDUCATION**

**Master of Engineering, Civil Engineering** **Sept. 2016 – Apr. 2018**  
Concordia University, Montreal, QC, Canada

- **Structural Engineering (Major)**
- **Construction Management**
- **Geotechnical Engineering**

**Master of Technology, Civil Engineering (Forensic Structural Engg.)** **August 2014 – May 2016**  
Gujarat Forensic Sciences University, GJ, India

**Bachelor of Engineering, Civil Engineering** **Aug. 2010 – Jun. 2014**  
Gujarat Technological University, GJ, India

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### **KEY COMPETENCIES**

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| • <b>Software Application:</b>           | MS Word, MS Excel, MS PowerPoint   |
| • <b>Drafting:</b>                       | AutoCAD, Revit Architecture (Autodesk Certification)   |
| • <b>Structural Analysis and Design:</b> | Knowledge of ETABS and Staad Pro   |
| • <b>Cost Estimation:</b>                | SAGE Timberline  |
| • <b>Canadian Standards:</b>             | CSA A23.3, NBCC 2010, Steel Design Handbook S16, RS MEANS 2016, Canadian Highway Bridge Design Code. |
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### **ACADEMIC PROJECTS**

**Analysis and Design of Low Rise Steel Structure:** **Jan. 2018 – Apr. 2018**

- Detailed layout of a CBF steel structure (plan and elevation) and the loads were taken from a research, by which, the manual design was conducted for gravity and earthquake loads by means of NBCC 2010 and Structural Steel Handbook (S16).
- Modelled entire structure and applied loads with various combinations as per the detailing in ETABS.
- Performed linear static and dynamic analysis of the model and outlined responses.

**Cost Estimation of a Video Store (Commercial Building):** **Sept. 2017 – Dec. 2018**

- Detailed cost estimation of a video store was done as a part of the course project.
- Initially performed Work Breakdown Structure (WBS) by following the CSI MasterFormat.
- Performed detailed estimation of the project by estimating the quantity take-offs of the activities.

- Performed pricing by taking reference of RS means (MasterFormat) and other local material suppliers for actual pricing.
- Used SAGE Timberline for pricing as it is based on Uni-Format.
- Prepared the final bid by adding all the overhead expenses and submitted before deadline.

#### **Design of Deep Beam (Strut & Tie Model):**

**Sept. 2017 – Dec. 2018**

- From the given loads and layout, the design of the deep beam was performed manually by means of Strut and Tie method.
- Design detailing was done allowing the design checks as per CSA A23.4 -14.

#### **Carbon Nanotube as Smart Sensors:**

**Jan. 2017 – Apr. 2017**

- The project was based on the smart materials for the structural health monitoring purpose for the various structures. Discussed various benefits of Carbon Nanotube and advantages of it over other materials were driven out. Moreover, its applicability as a strain sensing material with various gauge ratios and various locations were discussed.

#### **Experimental Evaluation of Bamboo Reinforced Concrete Columns**

**Jul. 2015 – Ma. 2016**

##### **Using Varying Aspect Ratio:**

- In this project, the main goal was to implement Bamboo as a reinforcing material in concrete structural elements. Moreover, the specimen of various aspect ratios with varying lengths were developed.
- By means of experiments, compressive strength of short concrete columns, tensile strength of bamboo strip and various procedures were outlined in the project. The best outcome was concluded for its applicability.

#### **Stone Matrix Asphalt using Non-Conventional Fibers:**

**Jul. 2013 – Ma. 2014**

- The aim of the project was to use gap graded stone proportion to make Stone Matrix Asphalt and use non-conventional fibers (i.e. Coconut fibers, Jute fibers) with partial replacement with asphalt.
- Performed Marshal stability test and draindown test. Results showed higher stability of the specimens and less draindown of asphalt from the mixture in high temperature.

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### **AREAS OF INTEREST**

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|---------------------------------------|---|
| • Structural Engineering              | • Civil Infrastructure                          |
| • Structural Health Monitoring        | • Analysis and design of various structures     |
| • Cost Estimation                     | • Forensic structural engineering               |
| • Construction and Project management | • Retrofitting and Rehabilitation of structures |
| • Health assessment of structures     | • Quality control of construction               |
| • Municipal infrastructure            | • Construction inspection                       |
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### **EXTRA CURRICULAR ACTIVITIES**

#### **Structural Health Assessment:**

- Conducted and led site visits with colleague students for data collection and structural health assessment at various historic monuments, collapsed bridge and old residential buildings.
- With careful revision of all available data, the conclusions were drawn and entire assessments were presented in professional way.

#### **Volunteering:**

- Volunteer at ISO, Concordia University.