Reza Nazar Shahsavani, EIT

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SUMMARY

- M. Eng. in Structural Engineering from the University of Manitoba, with an Engineer-in-Training (EIT) designation from Engineers Geoscientists Manitoba, and immediate availability.

- Thorough knowledge of engineering principles, structural design and analysis of buildings, project scheduling, 3D modeling, Building Information Modeling, technical report writing, and interpreting engineering drawings.

- Good knowledge of design codes and standards such as the National Building Code of Canada (NBCC), CSA A23.3, ACI, AISC, AASHTO LRFD, CSA S6 (CHBDC), and CPCI Design Manual.

WORK EXPERIENCE

- **Structural/Architectural Drafter, Splendid Homes Corp.**   *May 2023- Nov. 2023*

  - Designed architectural and structural packages, demolition plans, and detailed 3D BIM models and renderings for over 10 residential wooden houses using AutoCAD and Revit.

  - Verified truss designs met all structural specifications.

  - Led Autodesk Revit training sessions for new hires.

- **Teaching Assistant for Bridge Engineering, University of Manitoba**   *Jan. 2023- Apr. 2023*

  - Conducted weekly sessions with students to address their questions and resolve their problems.

- **Civil Engineering Intern, Dreamland Infrastructure Developments Co.**   *May 2022- Aug. 2022*

  - Designed the architectural plan for two residential buildings and a data center using AutoCAD and Revit.

  - Generated construction cost estimates, performed material takeoffs utilizing MS Excel, conducted on-site visits and field reviews, tracked progress and managed schedules using MS Project, and prepared technical reports.

  - Detected and resolved clashes by overlaying architectural, electrical, and mechanical plans using Navisworks.

  - Animated building walkthroughs utilizing the Navisworks animator module ([Demo](#)).

TECHNICAL SKILLS

Modeling and Analysis	SAP2000, ETABS, SAFE, Revit, AutoCAD, Navisworks, Bluebeam, ArcGIS, MS Project, Office Suite (Excel, Word, and PowerPoint)
Programming Languages	Python, MATLAB, Dynamo

EDUCATION

University of Manitoba   *Sep. 2022- May 2024*
Master of Engineering in Structural Engineering, GPA: **3.88/4.5**, Advisor: Dr. Graziano Fiorillo
Recipient of International Graduate Student Entrance Scholarship (IGSES)
Selected Course Work: Finite Element Analysis, Structural Health Monitoring, Plastic Analysis of Structural Frames, Virtual Design and Construction, Prestressed Concrete, and Behaviour of Reinforced Concrete Members.

K. N. Toosi University of Technology   *Sep. 2019- Jun. 2022*
Master of Science in Construction Management, GPA: **3.88/4**
Selected Course Work: Project Scheduling and Control, Building Information Modeling, Infrastructure Asset Management, Construction Contracts, and Financial Management.

Shahid Beheshti University   *Sep. 2014- Feb. 2019*
Bachelor of Science in Civil Engineering, GPA: **3.01/4**

ACADEMIC PROJECTS

- **Design and Construction of a Simply Supported Reinforced Concrete Beam** *Jan. 2024- Apr. 2024*
  Advanced Behavior of Reinforced Concrete coursework

  – Designed and constructed a simply supported reinforced concrete beam with a team, following the CSA A23.3 design code, and conducted material testing to verify concrete strength and reinforcement properties.

  – Instrumented the beam with strain gauges, pi-gauges, and LVDTs, and tested it in a 3-point bending setup to monitor performance and record experimental data.

  – Analyzed experimental data individually, creating moment-curvature diagrams, load-deflection curves, and strain measurements, and identified cracking patterns and failure modes.

- **The Use of 3D-Printed PA6-GF Elements in Structural Testing** *Apr. 2023- Apr. 2024*
  Master of Engineering Project

  – Demonstrated the efficacy of 3D printing techniques using polyamide 6 (Nylon) with glass fibers (PA6-GF) for structural testing, optimizing the process and reducing time and costs.

  – Assessed mechanical properties of PA6-GF, including stress-strain curves, Modulus of Elasticity, and Poisson's Ratio, confirming its suitability for structural applications.

  – Successfully applied PA6-GF to support steel meshes in a scaled bridge deck construction, achieving a 14% and 7% reduction in construction time and cost, respectively.

- **Design and Analysis of a Footbridge Using SAP2000** *Sep. 2022- Dec. 2022*
  Finite Element Analysis coursework

  – Developed a model of a footbridge in SAP2000 based on a detailed plan and elevation drawings.

  – Analyzed the bridge model to determine the first 20 natural frequencies and their corresponding periods, as well as forces, moments, and maximum vertical displacement under various load conditions.

  – Documented the modeling approach for each structural element (beam, column, frame, slab, bearing, and brace).

  – Justified the reliability and trustworthiness of the work through an analytical methodology.

- **Asset Management for a Bridge Network** ([Demo](#)) *Feb. 2020- Jun. 2020*
  Infrastructure Asset Management coursework

  – Developed a comprehensive asset management plan for a bridge network consisting of 161 bridges.

  – Simulated the management plan utilizing a Discrete-Event Simulation (DES) library in Python.

  – Performed preventive maintenance, rehabilitation, and reconstruction investment analysis.

  – Conducted a study of the analysis methodology, including data analysis, development of maintenance alternatives and performance indicators, Life Cycle Cost Analysis (LCCA), and annual investment plan per asset.

- **Architectural and Structural Design of a Residential Building** ([Demo](#)) *Feb. 2020-Jun. 2020*
  Building Information Modeling coursework

  – Designed the architectural and structural plan of a residential building based on Level Of Development (LOD) 300 in Revit and animated the construction process using the Navisworks animator module.

  – Detected and resolved clashes by overlaying structural and sprinkler plans using Navisworks.

  – Created a Work Breakdown Structure (WBS) and performed detailed quantity takeoff using the Navisworks quantification module.