# Reza Nazar Shahsavani

rezashahsavani@gmail.com      [Personal Website](#)

## OBJECTIVES

**M**. Sc. Student Interested in Ph. D. Research Positions in Safety, Asset Management, and Building Information Modeling (BIM)

## EDUCATION

**K. N. Toosi University of Technology** *Sep. 19-Present*
**Master of Science in Construction Engineering and Management**
Department of Civil Engineering, GPA: **3.88/4**
**Selected Course Work:** Construction Project Scheduling and Control; System Analysis and Design; Construction Materials and Methods; Construction Contracts and Administration; Building Information Modeling; Construction Law; Infrastructure Asset Management; Financial Management

**Shahid Beheshti University** *Sep. 14-Jun. 19*
**Bachelor of Science in Civil Engineering**
Department of Civil Engineering, Last 2 years' GPA: **3.01/4**
**Selected Course Work:** Statics; Solid Mechanics (Strength of Materials) I & II; Structural Analysis I & II; Building Construction Materials; Concrete Structures I & II; Steel Structures I & II; Foundation Engineering; Pavement Analysis & Design; Welding Technology; Bridge Engineering; Construction Methods; Maintenance & Repair of Structures; Masonry Buildings; Quantity Surveying and Estimating; Geographic Information System (GIS); Photogrammetry; Energy Economics

## PROJECTS

- **Classification of Buildings Based on Public's Perception and Safety Criteria** *Sep. 20-Present*
  *Master of Science Thesis Project*

  – [Demo: Thesis Dashboard](#)

  – Conducted a survey of public's perception regarding safety of under construction buildings in the city of Tehran based on the images collected from such buildings; Compiled a study of correlation between public's opinion of the safety of the buildings with standard safety measures by analyzing the developed safety maps.

  – Collected more than 1,800 photos of under construction buildings and classified them based on type of structure, type of building, and construction status.

  – Created a safety map using ArcGIS to sort municipal districts of the city of Tehran utilizing a heuristic safety index.

  – Developed an interactive Excel file and dashboard that displays all project information dynamically.

- **Asset Management for a Bridge Network** *Feb. 20-Jun. 20*
  *Infrastructure Asset Management coursework*

  – [Demo: Asset Management Dashboard](#)

  – Developed a comprehensive asset management plan for a bridge network consisting of 161 bridges, considering bridges' attributes including bridge length, number of spans, maximum span length, condition rating, sufficiency rating, annual traffic growth rate, and replacement cost.

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

- Conducted experiments and developed solutions for (i) Prioritizing bridges based on Annual Average Daily Traffic (AADT) and condition rate, (ii) Analyzing the condition of bridges based on the annual deterioration rate, (iii) Budget allocation and optimization considering annual fixed-budget allocation or allocating a large capital in the beginning with a lower annual budget allocation.

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

- Categorizing investments into preventive, rehabilitative maintenance, and replacement/ reconstruction.

- Derived the state of the asset inventory (quantity and condition).

- Developed a comprehensive study of the analysis methodology including data analysis, development of maintenance alternatives, Life Cycle Cost Analysis (LCCA), development of performance indicators, decision making and prioritization logic, and annual investment plan per asset.

- **Architectural and Structural Design of a Residential Building** *Feb. 20-Jun. 20*
  *Bulding Information Modeling (BIM) coursework*

- Demo: Navisworks TimeLiner and Animator

- Designed the architectural and structural plan of a residential building based on Level Of Development (LOD) 300 in Revit.

- Implemented a clash detection technique in Navisworks.

- **Analysis and Design of a Sanitary Sewer Tunnel for The City of Edmonton** *Sep. 19-Feb. 20*
  *System Analysis and Design coursework*

- Simulated the plan of a Tunnel Boring Machine (TBM) digging a sanitary sewer tunnel utilizing a Discrete-Event Simulation (DES) library in Python.

- Developed a plan in which a crane loads and installs liners, liners perform lining with precast-concrete, crane unloads liners and spoil, and a train carries the spoil to an offsite location.

- **Survey of Simulation-based Methodologies for Assessing Safety in Construction** *Feb. 20-Jun. 20*

- Conducted a comprehensive literature review of over 30 recent publications on safety assessment methods taking advantage of simulation-based analysis.

## PUBLICATIONS

**Classification of Buildings Based on Public's Perception and Safety Criteria**
*Reza Nazar Shahsavanai, Hamidreza Abbasianjahromi, and Mohammad Saied Dehghani*
**To be submitted**

## TECHNICAL SKILLS

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|---|---|
| **Modeling and Analysis** | Autodesk Revit, Navisworks, MS Project, ArcGIS, SPSS, Simphony, AutoCad |
| **Programming Languages** | Python, Fortran |
| **Graphic Design** | Power BI, Prezi, Adobe Photoshop, Adobe Premiere |
| **Other Activities** | Professional Photographer and Video Creator |

## REFERENCES

Available Upon Request.