

# Nima Aminpour

## Structural Engineer

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Strong background in concrete testing, 3D concrete printing, and structural design. Experienced in structural analysis, construction, building codes and standards, and project timeline and budget management. Proficient in a variety of software programs including SAP2000, ETABS, Abaqus, Revit, and Python.

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### SKILLS:

- Structural analysis and Design (ETABS, SAP2000, RAM concept, REVIT) – concrete, steel, masonry
  - Concrete (mixture design, testing, 3D concrete printing)
  - Drafting and design (Autodesk Fusion 360, Autodesk Civil 3D, REVIT)
  - 3D concrete printing (AutoCAD)
  - Finite Element Analysis (Abaqus)
  - Data Science (Data Analysis and Machine Learning with Python)
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### EXPERIENCE:

- Teaching Assistant, Penn State College of Engineering University Park, PA) Sep 2022 – May 2023

Masonry design, reinforced concrete and post-tension concrete

- Student Researcher, BHRC (Tehran, Iran) Jan 2020 – Jan 2021

Developed concrete mixtures for Textile Reinforced Concrete (TRC) to improve the durability and strength for retrofitting existing structures; the new cementitious matrix contains Zeolite to improve the durability of AR-Glass in alkaline environment at Road, Housing and Urban Development Research Center

- Assistant Construction Manager, Mahsapol (Tehran, Iran) Jan 2017 – Dec 2019

Resource planning and management to meet deadline within budget confines, Inspection of structural construction to meet codes and regulations.

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### EDUCATION:

- The Pennsylvania State University, Ph.D., Architectural Engineering (Structural Option) Jan 2021 – Dec 2023

Dissertation: Development of Structural Capacity Relations for 3D Printed Lightweight Concrete Components  
funded by GAANN Fellowship

- University of Tehran, Master of Science, Structural Engineering Sep 2018 – Dec 2020

Thesis: Optimization of TRC cementitious matrix and performance evaluation of textile reinforced concrete

- Sharif University of Technology, Bachelor of Science, Civil Engineering Sep 2013 – May 2017
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### HONORS & AWARDS:

GAANN Fellowship - U.S. Department of Education

Jan 2021

## PROJECTS:

Steel Structure design Design a 5-story steel structure	Nov 2016
Concrete Structure Design Design, drafting and cost assessment of a 5-story concrete structure	Dec 2016
Finite Element Analysis FEA of 2D objects with rectangular element with Python	May 2019
Seismic Design of Concrete Structure Seismic design of 12-story concrete structure with hand calculations	Oct 2019
Ageing Test Development for TRC Developing ageing test for evaluating the durability of AR-glass textiles in alkaline environment of concrete	Sep 2020
Seismic Test of TRC Walls Seismic test of retrofitted full scale masonry walls with TRC on shaking table	Nov 2020
Detection of Alkali-Silica Reaction Detection of alkali silica reaction with Raman spectroscopy	Feb 2021
Reactive Transport Simulation in Concrete Investigation of Reaktoro (Python library) to develop simulation of reactive transport in concrete environment	April 2021
Shear walls design in ETABS Assessment of different shear wall combinations on the seismic resistance of building	May 2021
Compressive Strength Prediction of Concrete Developed a code to predict the strength of concrete with machine learning based on the mixtures	Nov 2021
Foundation Design for Permafrost Regions Report on investigation on effect of different purposed foundation types on structure after settlement with Abaqus	Dec 2021
Developing of General Design Equations for Structural Capacity Journal article that studies the design equations for concrete and masonry to purpose a general procedure	Jan 2022
Development of Light-Weight Concrete for 3DCP Development of light-weight concrete for 3DCP that can float on water with expanded polystyrene	Nov 2022
3D Concrete Printing of a Bridge 3D concrete printing of a 12-ft bridge	Jan 2023

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## CERTIFICATES:

- College Teaching - Schreyer Institute for Teaching Excellence
- Revit 2023 – LinkedIn Learning
- Data Manipulation with pandas – Data camp
- Cleaning Data in Python – Data camp
- Python Data Science Toolbox – Data camp