



#### EDUCATION

- Isfahan University of Technology
  - Bachelor of Science, Civil Engineering, 2007
- Sharif University of Technology
  - Master of Science, Civil Engineering, 2010
- Texas A&M University
  - Doctor of Philosophy, Civil Engineering, 2015

#### PRACTICE AREAS

- Structural Analysis/Computer Applications
- Finite Element Analysis
- Computer Modeling
- Concrete Structures
- Steel Structures
- Structural Analysis
- Failure/Damage Investigations

#### REGISTRATIONS

- Professional Engineer in TX

#### PROFESSIONAL AFFILIATIONS

- American Society of Civil Engineers
- American Concrete Institute

#### CONTACT

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#### EXPERIENCE

Eisa Rahmani's primary interest is in strength and behavior of reinforced concrete, asphalt concrete, and granular materials. Since joining WJE, Dr. Rahmani has been involved in multiple projects involving structural analysis and evaluation, and condition assessment of a wide variety of structures using finite element analysis, classical methods, and industry design codes. His past work included nonlinear finite element analysis of time- and temperature-dependent materials such as asphalt concrete and granular materials under projects funded by FHWA and FAA. Dr. Rahmani has been using Abaqus finite element software since 2011 and he has experience with ATENA structural analysis software for reinforced concrete.

Dr. Rahmani's graduate work focused on the numerical modeling and laboratory calibration and validation of damage behavior of asphalt concrete materials under environmental effects. He has published papers in various engineering journals and conference proceedings. Prior to his graduate work, he had experience in structural design of various commercial and industrial steel structures using commercial design software.

#### REPRESENTATIVE PROJECTS

##### Finite Element Analysis

- Oklahoma Department of Transportation (ODOT) Girder Crack Investigation - OK: Nonlinear finite element analysis of distress in anchorage zone of ODOT girder beams using ABAQUS concrete damage-plasticity model
- PCI TEE Flange Connector Modeling: Stress-strain and deflection analyzes of steel connectors and elastic analysis of welded joints for fatigue requirements
- Baltimore Avenue Parking Structure Restoration - Detroit, MI: Nonlinear finite element analysis of parking deck to investigate the load bearing capacity of the slabs with repaired unbonded post-tensioned tendons

- Two-Way Slab-Column Joint Analysis: 3-dimensional component-level structural analysis of slab-column connection using nonlinear finite element approach; investigation of the post-cracking strength of the slab to evaluate the adequacy of the system in response to load test conditions

#### Structural Analysis

- 95th Street Terminal - Chicago, IL: Stability evaluation of installed moment frame prior to erection of additional members per AASHTO design load

#### Failure/Damage Investigations

- Lid Frame Evaluation - Fargo, ND: Nonlinear finite element analysis of manhole frame-cover performance to evaluate the failure cause of the manhole covers
- Assessment of Concrete Bridge Deck Cracking: Nonlinear finite element analysis to assess the cracking condition of cast-in-place (CIP) closure pours; evaluation of the extent and the nature of cracking at closure pour joints using nonlinear finite element analyses both with and without Polyester Polymer Concrete (PPC) retrofit; characterization and calibration of the short-term plastic-cracking and long-term creep properties of PPC concrete using comprehensive in-house laboratory test data