



## PERSONNEL QUALIFICATIONS

### Fangzhou (Jack) Dai | Senior Associate



#### EDUCATION

- University of Wyoming
  - Bachelor of Science, Civil Engineering, 2011
- University of Illinois at Urbana-Champaign
  - Master of Science, Structural Engineering, 2014

#### PRACTICE AREAS

- Structural Testing
- Instrumentation/Monitoring/Load Testing
- Vibration and Noise Monitoring
- Nondestructive Evaluation
- Health Monitoring
- Repair and Rehabilitation
- Structural Analysis

#### REGISTRATIONS

- Professional (Civil) Engineer in CA

#### PROFESSIONAL AFFILIATIONS

- American Concrete Institute
- American Society of Civil Engineers

#### TECHNICAL COMMITTEES

- Structural Engineering Institute (SEI) - Methods of Monitoring Structural Performance

#### CONTACT

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#### EXPERIENCE

Since joining WJE in 2018, Jack Dai has been involved in a broad range of projects, that have included the evaluation, testing, instrumentation and monitoring, vibration analysis, and nondestructive evaluation of a variety of structures. His background and interests include structural dynamics, condition assessment of historic structures, load testing, nondestructive evaluation, and full-scale laboratory testing.

Prior to joining WJE, Mr. Dai was a project associate and manager for the design and implementation of full-scale structural health monitoring systems. He is an active member in several professional societies and technical committees. He has authored publications and has made presentations on structural instrumentation and monitoring.

#### REPRESENTATIVE PROJECTS

##### Structural Testing

- Salt Lake City Airport - UT: Full-scale testing of concrete beams to quantify strengths of various bar reinforcing details
- Mid-Rise Condominium Building - Miami, FL: Wind tunnel testing of building envelope components with analyses of vibration, strain, and displacement
- Ultra-High Performance Concrete (UHPC): Full-scale laboratory testing to investigate shear behavior of UHPC beams
- Hotel - Miami Beach, FL: Testing and analysis of decayed timber framing members

##### Instrumentation/Monitoring/Load Testing

- Sunshine Bridge Emergency Repair - Convent, LA: Strain, load, and displacement monitoring during the replacement of a damaged component
- Chicago Public School District - IL: Structural condition assessment; instrumentation and load testing of reinforced concrete roofs
- Multiple Manufactured Gas Plant Sites: Structural condition assessment; vibration and tilt monitoring of key surrounding structures near the excavation

##### Vibration and Noise Monitoring

- Frist Art Museum - Nashville, TN: Vibration measurement and analysis to protect critical art collection during construction at an adjacent site
- Birmingham Museum of Art - Birmingham, AL: Analysis of vibration propagation and attenuation for risk management during the reconstruction of an adjacent highway
- Ohio State University, Psychology Building - Columbus: Vibration testing and analysis to study the impact of facade demolition and replacement on sensitive medical devices
- High-Rise Building - Chicago, IL: Vibration analysis to locate source of abnormal noise/vibration activities along the elevator shaft to guide remediation work

##### Nondestructive Evaluation

- River City - Chicago, IL: Assessment of reinforced concrete roof with complex geometry using ground penetrating radar
- Plainfield High School - Plainfield, IL: Assessment of athletic field concrete slab using ground penetrating radar
- High-Rise Building - Chicago, IL: Condition assessment of post-tensioned slabs and concrete facade using ground penetrating radar and ultrasonic tomography

##### Health Monitoring

- Governor Mario M. Cuomo Bridge (Tappan Zee Bridge Replacement) - Tarrytown, NY: Full-scale structural health monitoring system \*
- Michigan Statewide Bridges - Michigan Department of Transportation: Long-term monitoring of carbon fiber prestressed and post-tensioned bridge components \*

\* Indicates with previous firms