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Engineering & Scientific Consulting

Jade Cohen, Ph.D., P.E.

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Professional Profile

Dr. Jade Cohen specializes in the damage assessment, structural failure investigation, and risk analysis of complex structural systems under extreme conditions, including earthquakes, construction-induced vibrations, and adjacent construction activities. She has extensive experience with advanced numerical modeling techniques, including nonlinear structural analysis, finite element analysis, and probabilistic risk assessments. Dr. Cohen has served as a consultant on various projects involving structural collapses, construction defects, and international arbitration cases.

As a consultant, Dr. Cohen has investigated collapses of multi-story buildings and conducted detailed forensic analyses to identify root causes and contributing factors, while providing opinions on the engineering standard of care. Her work also includes participation in arbitration for design-build disputes, where she has analyzed design modifications, scope changes, and construction practices for large-scale infrastructure projects. Dr. Cohen has a strong background in risk analysis, particularly in developing probabilistic frameworks to evaluate the performance of utility infrastructure and transportation systems subjected to seismic hazards.

Prior to joining Exponent, Dr. Cohen was a graduate student researcher at the Pacific Earthquake Engineering Research (PEER) Center at the University of California, Berkeley, where she earned a Ph.D. in Structural Engineering. Over the course of her doctoral research, she developed a modular computational framework for the collapse risk and damage assessment of 3D multistory steel frames. Her M.S. thesis at UC Berkeley focused on the resolution of non-convergence issues in the seismic response analysis of OpenSees bridge models. Additionally, Dr. Cohen investigated modeling techniques for the buckling analysis of steel braces during her M.S. thesis at École Nationale des Ponts et Chaussées.

Dr. Cohen has rich experience with teaching graduate level structural engineering courses during her graduate studies at UC Berkeley, including linear and nonlinear structural analysis. Prior to joining UC Berkeley, Dr. Cohen also worked on the structural design of multiple high-rise buildings while employed at Gilsanz Murrary Steficek, LLP in New York City.

Academic Credentials & Professional Honors

Ph.D., Civil and Environmental Engineering, University of California, Berkeley, 2022

M.S., Civil and Environmental Engineering, University of California, Berkeley, 2018

M.S., Civil Engineering and Construction, Ecole Nationale des Ponts et Chaussees, 2017

SEI Futures Fund Young Professional Tier 1 Scholarship, 2025

Outstanding Graduate Student Instructor Award, University of California, Berkeley, 2019

Jacques Coiffard Fellowship, École Nationale des Ponts et Chaussées, France, 2016

Licenses and Certifications

Professional Engineer Civil, California, #95023

Professional Engineer Civil, Connecticut, #PEN.0038390

Professional Engineer Civil, New Jersey, #24GE06220200

Prior Experience

Structural Engineering Trainee, Gilsanz Murray Steficek, New York, 2015-2016

Professional Affiliations

Earthquake Engineering Research Institute (EERI) member

American Society of Civil Engineers (ASCE) member

ASCE Structural Engineering Institute Performance-Based Design for Structures Committee - Secretary

Structural Engineers Association of New York (SEAoNY) associate member

SEAoNY Programs Committee member

Languages

French (France)

Publications

Cohen J; Filippou, FC. (2024) “A family of damage-plasticity frame elements with strength and stiffness deterioration” 18th World Conference on Earthquake Engineering, Milan.

Dilsiz, A., S. Gunay, K. Mosalam, E. Miranda, C. Arteta, H. Sezen, E. Fischer, M. Hakhamaneshi, W. Hassan, B. Alhawamdeh, S. Andrus, J. Archbold, S. Arslanturkoglu, N. Bektas, L. Ceferino, J. Cohen, B. Duran, K. Erazo, G. Faraone, T. Feinstein, R. Gautam, A. Gupta, S. Haj Ismail, A. Jana, S. Javadinasab Hormozabad, A. Kasalanati, M. Kenawy, Z. Khalil, I. Liou, M. Marinkovic, A. Martin, Y. Merino-Peña, M. Mivehchi, L. Moya, C. Pájaro Miranda, N. Quintero, J. Rivera, X. Romão, M. Lopez Ruiz, S. Sorosh, L. Vargas, P. Velani, H. Wibowo, S. Xu, T. Yilmaz, M. Alam, G. Holtzer, T. Kijewski-Correa, I. Robertson, D. Roueche, A. Safiey (2023). "StEER: 2023 Mw 7.8 Kahramanmaras, Türkiye Earthquake Sequence Preliminary Virtual Reconnaissance Report (PVRR)", in StEER- February 6, 2023, Kahramanmaras, Türkiye, Mw 7.8 Earthquake [Version 2]. DesignSafe-CI. https://doi.org/10.17603/ds2-7ry2-gv66Al

Cohen, J. (2022) “A flexible framework for the damage-based modeling of frame elements with applications to steel structures”, PhD dissertation, University of California, Berkeley.

Hu, F; Robertson, I; Mosalam, KM; Gunay, S; Kijewski-Correa, T; Peng, H; Prevatt, D; Cohen, J. (2018) "StEER - 2018 Haiti Earthquake: Preliminary Virtual Assessment Team (P-VAT) Report", in StEER - 2018 Haiti Earthquake: Preliminary Virtual Assessment Team (P-VAT) Report. DesignSafe-CI. https://doi.org/10.17603/DS2Z69H

Cohen, J. (2018) “Study of Non-Convergence Issues in the Seismic Response Analysis of a Three-Span Reinforced Concrete Bridge Using OpenSEES”, Master’s thesis, University of California, Berkeley.

Cohen, J. (2017) “Computational Modeling and Nonlinear Pushover Analysis of Concentrically Braced Frames using FEDEASLab”, Master’s thesis, École Nationale des Ponts et Chaussées, France.

Presentations

Cohen J; Emir, Z., Jampole, S., Jean, ME., “Navigating Legal Challenges in Transportation Projects: Strategies for Dispute Avoidance and Resolution”, Women’s Transportation Seminar International Annual Conference, Toronto, May 2025.

Cohen J; Filippou, FC. “A family of damage-plasticity frame elements with strength and stiffness deterioration” 18th World Conference on Earthquake Engineering, Milan, July 2024.

Filippou, FC; Cohen J. “Energy Dissipation and Damage Evolution Considerations in the Inelastic Transient Response of Frames” 18th World Conference on Earthquake Engineering, Milan, July 2024.

Cohen J; Filippou, FC. “A family of frame elements with damage evolution for steel structures” Engineering Mechanics Institute Conference, Chicago, May 2024.

Cohen J, “Multiple Degrees of Freedom Systems Response to Earthquake Excitation”, CE-GY 6253 Structural Dynamics, New York University, Dr. Martin, Guest Lecture, Nov. 27, 2023.

Cohen J; Filippou, FC. “An efficient computational framework for the damage assessment of steel frames” Engineering Mechanics Institute Conference, Atlanta, June 2023.

Cohen, J; Filippou, FC. “Resolution of Non-Convergence Issues in Seismic Response Analysis of Bridges” Pacific Earthquake Engineering Research Annual Meeting, Poster Session, Los Angeles, CA, January 2019.

Cohen, J; Chen, J; Filippou, FC. “Resolution of Non-Convergence Issues in Seismic Response Analysis of Bridges” Pacific Earthquake Engineering Research Annual Meeting, Poster Session, Berkeley, CA, January 2018.

Project Experience

Forensic Investigations

Adjacent Construction Disputes: Investigated damage caused by adjacent construction activities, including a ceiling collapse from vibrations, damage to a multistory condominium adjacent to new construction, and the collapse of a three-story masonry building during excavation. Authored expert reports and affidavits identifying root causes, contributing factors, responsible parties, and opinions on the standard of care.

Structural Collapse: Investigated the collapse of a multi-story parking garage. Documented evidence during emergency demolition. Co-authored expert report identifying the primary cause and contributing factors to the failure.

Roof Partial Collapse: Investigated the collapse of a cold-formed steel roof during construction. Conducted structural analysis to identify root causes, contributing factors, and evaluated compliance with industry codes and standards.

Façade Investigations: Investigated the collapse of an aluminum facade panel on a recently built structure as well as the partial collapse of a masonry facade during demolition.

Steel Wire Rope Failure: Investigated the failure of a structural steel wire rope used to support a large hanging object in a wet environment.

Defects

Residential Buildings Construction Defects: Documented alleged construction defects in several residential buildings. Assessed issues related to cracking of non-structural partitions, water infiltration, roofing installation, and evaluated whether these issues were tied to design flaws or construction quality.

Design-Build Disputes

International Arbitration for Underground Metro System in the Middle East: Evaluated design and construction modifications to several underground metro stations and tunnels to determine if they constituted changes to the contractor's scope of work, particularly due to changes in the tunnel boring machine sequencing. Estimated the design level of effort required to execute these changes.

International Arbitration for Mall Construction: Analyzed claims from a design-build dispute for a new mall in the Middle East. Quantified design changes resulting from owner requests, assisted in the joint expert process, and contributed to expert reports to support the dispute resolution process.

Highway Expansion: Evaluated the adequacy of the tender design for a highway widening project in relation to bid pricing. Issues included the design of new and replacement bridges, bearings, abutments, sign structures, culverts, and the drainage system.

Risk Analysis

Utility Infrastructure Risk Assessment: Developed a quantitative risk assessment framework to evaluate the performance of steel utility poles subjected to earthquake hazards on behalf of a large utility company. Created fragility curves to assess failure risks and inform mitigation strategies.

Seismic Risk Analysis and Earthquake Early Warning System: Performed a probabilistic fault displacement hazard analysis for an underground metro system that crosses an active geological fault. Evaluated the structural adequacy of the tunnel design under fault displacement hazard. Analyzed the feasibility of an earthquake early warning system and quantified the achievable risk reduction using Monte Carlo simulations.

Additional Education & Training

SimCenter Programming Bootcamp – July 2018