



Exponent[®]
Engineering & Scientific Consulting

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

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Professional Profile

Dr. Jade Cohen specializes in the damage assessment, collapse simulation, and failure analysis of large structural systems. She has experience with advanced numerical modeling techniques for the nonlinear response of steel and concrete structures under extreme loading conditions. Her areas of expertise include nonlinear structural analysis, earthquake dynamic analysis, damage-plasticity theory, and the implementation of robust solution strategies for analytical simulations.

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. To this end, she combined concepts of continuum damage mechanics with resultant plasticity and distributed plasticity theories to formulate a library of 3D degrading beam-column elements. The proposed elements have different degrees of computational efficiency and can be used in an adaptive fashion to gradually refine large numerical models and match a target accuracy level. Her MS thesis at UC Berkeley focused on the resolution of non-convergence issues in the seismic response analysis of OpenSees bridge models. As part of that project, she proposed innovative cross section discretization strategies for the nonlinear cyclic response of circular reinforced concrete columns. Additionally, Dr. Cohen investigated modeling techniques for the buckling analysis of steel braces in the context of her MS 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 Murray 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

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

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 member

Structural Engineers Association of New York (SEAoNY) associate member

SEAoNY Programs Committee member

Languages

French

Publications

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; 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.

Additional Education & Training

SimCenter Programming Bootcamp – July 2018