Stanford



Adam Zsarnoczay

Senior Research Engineer, Civil and Environmental Engineering

Curriculum Vitae available Online

Bio

BIO

Adam Zsarnóczay is a Research Engineer at the John A. Blume Earthquake Engineering Center at Stanford University, where he focuses on disaster simulations that support multi-hazard risk assessment and management at a regional scale. As an Associate Director at the NHERI SimCenter, he manages the development of SimCenter's computational simulation platform and works closely with researchers and practitioners to foster collaboration in the natural hazards engineering community. Adam obtained his Ph.D. in civil engineering at the Budapest University of Technology and Economics and also completed a graduate program at the University of Tokyo. He has experience working at scales ranging from an individual structural member through a building to cities with hundreds of thousands of assets. His research interests include probabilistic natural hazard assessment, model development and calibration for structural response estimation and performance assessment, surrogate modeling and uncertainty quantification in large-scale, regional simulations, and using quantitative disaster simulations to support risk management and mitigation.

ACADEMIC APPOINTMENTS

- Senior Research Engineer, Civil and Environmental Engineering

Research & Scholarship

CURRENT RESEARCH AND SCHOLARLY INTERESTS

Adam's research focuses on disaster simulations that support multi-hazard risk assessment and management at a regional scale. He has experience working at scales that range from an individual structural member through a building up to cities with hundreds of thousands of assets. His research interests include probabilistic natural hazard assessment, model development and calibration for structural response estimation and performance assessment, surrogate modeling and uncertainty quantification in large-scale, regional simulations, and using quantitative disaster simulations to support risk management and mitigation.

Publications

PUBLICATIONS

- **Second-generation component and system-level seismic fragility models for reinforced concrete bridges in California** *EARTHQUAKE SPECTRA*
  Chen, S., Xie, Y., Wu, C., Burton, H., Padgett, J. E., Zsarnoczay, A.
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- **Accessing acute care hospitals in the San Francisco Bay Area after a major hayward earthquake.** *Nature communications*
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- **An open-source simulation platform to support and foster research collaboration in natural hazards engineering** *FRONTIERS IN BUILT ENVIRONMENT*
  Zsarnoczay, A., Deierlein, G. G., McKenna, F., Schoettler, M., Yi, S., Cetiner, B., Satish, A., Zhao, J., Bonus, J., Melaku, A. F., Naeimi, S., Arduino, P., Davidson, et al
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- **Modeling post-earthquake functional recovery of bridges** *EARTHQUAKE SPECTRA*
  Wu, C., Burton, H., Zsarnoczay, A., Chen, S., Xie, Y., Terzic, V., Guenay, S., Padgett, J. E., Mieler, M., Almufti, I.
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- **Unifying the Current State of the Art in Hurricane Wind Risk Simulations: A Systematic Review** *JOURNAL OF STRUCTURAL ENGINEERING*
  Hamburger, R., Zsarnoczay, A., Otu Tackie-Otoo, N., Kijewski-Correa, T., Davidson, R. A., Spence, S. M. J.
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- **Impact of parameter selection on seismic loss and recovery time estimates: A variance-based sensitivity analysis** *EARTHQUAKE SPECTRA*
  Kourehpaz, P., Hutt, C., Zsarnoczay, A.
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- **Modeling post-disaster recovery: Accounting for rental and multi-family housing** *EARTHQUAKE SPECTRA*
  Mongold, E., Costa, R., Zsarnoczay, A., Baker, J. W.
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- **Consequences of consequence models: The impact of economies of scale on seismic loss estimates** *EARTHQUAKE SPECTRA*
  Banihashemi, M., Miliziano, A., Zsarnoczay, A., Wiebe, L., Filiatrault, A.
  2024; 40 (2): 1396-1424
- **Validation of an Augmented Parcel Approach for Hurricane Regional Loss Assessments** *NATURAL HAZARDS REVIEW*
  Kijewski-Correa, T., Cetiner, B., Zhong, K., Wang, C., Zsarnoczay, A., Guo, Y., Lochhead, M., McKenna, F.
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- **Community Perspectives on Simulation and Data Needs for the Study of Natural Hazard Impacts and Recovery** *NATURAL HAZARDS REVIEW*
  Zsarnoczay, A., Deierlein, G. G., Williams, C. J., Kijewski-Correa, T. L., Esnard, A., Lowes, L. N., Johnson, L.
  2023; 24 (1)
- **Machine learning-based regional scale intelligent modeling of building information for natural hazard risk management** *AUTOMATION IN CONSTRUCTION*
  Wang, C., Yu, Q., Law, K. H., McKenna, F., Yu, S. X., Taciroglu, E., Zsarnoczay, A., Elhaddad, W., Cetiner, B.
  2021; 122
- **A Cloud-Enabled Application Framework for Simulating Regional-Scale Impacts of Natural Hazards on the Built Environment** *FRONTIERS IN BUILT ENVIRONMENT*
  Deierlein, G. G., McKenna, F., Zsarnoczay, A., Kijewski-Correa, T., Kareem, A., Elhaddad, W., Lowes, L., Schoettler, M. J., Govindjee, S.
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- **Using model error in response history analysis to evaluate component calibration methods** *EARTHQUAKE ENGINEERING & STRUCTURAL DYNAMICS*
  Zsarnoczay, A., Baker, J. W.
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