

Arjun Jayaprakash

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RESEARCH INTERESTS	<ul style="list-style-type: none">• Performance Based Design and Assessment of Structures• Large-scale Testing of Resilient Structural Systems• Earthquake and Multi-Hazards Engineering• Implementation of Statistical Learning in Civil Engineering	
EDUCATION	North Carolina State University , Raleigh, NC <i>PhD. Civil Engineering</i> GPA: 4.0/4.0	Jun, 2016 - May, 2020
	North Carolina State University , Raleigh, NC <i>MCE Civil Engineering</i> GPA: 3.9/4.0	Aug, 2014 - May, 2016
	National Institute of Technology Calicut , Calicut, India <i>Bachelor of Technology in Civil Engineering</i> GPA: 7.4/10.0	Jul, 2007 - May, 2011
WORK APPOINTMENTS	North Carolina State University , Raleigh, NC <i>Instructor on Record - CE 214 Statics</i>	May, 2019 - Dec, 2019
	North Carolina State University , Raleigh, NC <i>Teaching Assistant</i>	May, 2019 - May, 2020
	North Carolina State University , Raleigh, NC <i>Doctoral Research Assistant</i>	Jun, 2016 - May, 2019
	Duke TIP , Sherman, TX <i>Instructor</i>	May, 2015 - Jul, 2015
	Satish Jain and Co. , Mumbai, India <i>Structural Design Engineer</i>	Sep, 2012 - Aug, 2013
	Shapoorji Pallonji , Chennai, India <i>Graduate Engineer (Planning)</i>	Aug, 2011 - Sep, 2012
COMPLETED RESEARCH PROJECTS	Structural Performance of the Grouted Shear Stud Connection at Low Temperatures <i>Guided by: Dr. James Nau, Dr. Mohammad Pour-Ghaz, and Dr. Mervyn Kowalsky</i>	Jul, 2016 - May, 2019
	Characterizing the Loading History of Earthquake Ground Motions <i>Guided by: Dr. Mervyn Kowalsky</i>	Jul, 2018 - Jul, 2019
	Sensitivity of MDOF Non-linear Dynamic Analyses to the Choice of Damping Models <i>Guided by: Dr. Mervyn Kowalsky</i>	Jan, 2018 - Apr, 2018

**REFEREED
JOURNAL
PUBLICATIONS**

- **Jayaprakash, A.**, Nau, J., Pour-Ghaz, M., and Kowalsky, M., “The Impact of Grout Deterioration on the Structural Performance of the Grouted Shear Stud Connection”, *Engineering Structures*, Under review.
- **Jayaprakash, A.** and Kowalsky, M., “Opposite Peak Ratio to Characterize Seismic Loading History for Performance Based Design”, *Earthquake Spectra*, Under review.

**CONFERENCE
PROCEEDINGS
PUBLICATIONS**

- **Jayaprakash, A.** and Kowalsky, M.J., “[Mean Balance Ratio to Characterize Ground Motion Loading History for Performance Based Design.](#)”, *Proceedings of the 12th Canadian Conference on Earthquake Engineering*, Quebec City, QC, Canada, June 2019.
- **Jayaprakash, A.**, Nau, J., Pour-Ghaz, M., and Kowalsky, M., “[Structural Consequences of Grout Deterioration in the Grouted Shear Stud \(GSS\) Connection.](#)”, *Proceedings of the Bridge Engineering Institute Conference 2019*, ISSN 2689-2804, Honolulu, HI, USA, July 2019.

**TECHNICAL
REPORTS**

- **Jayaprakash, A.**, Nau, J., Pour-Ghaz, M., and Kowalsky, M., “[Durability of the Grouted Shear Stud Connection at Low Temperatures.](#)”, *Tech. Rep. HFHWY00039*, Alaska Department of Transportation and Public Facilities, Juneau, AK, USA, May 2019.
- **Jayaprakash, A.**, Price, C., Jiang, A., Pour-Ghaz, M., Nau, J., and Kowalsky, M., “[Comparison of Cylinder and Cube Strength for Typical Grouts.](#)”, *Summary Report RD-18-01*, Constructed Facilities Laboratory, Dept. of Civil, Construction and Environmental Engineering, NC State University, Raleigh, NC, USA, Jan 2018.

**FUNDED GRANT
PROPOSALS**

- *External Pocket and Socket Connections for the Seismic Design of Alaska Bridges* Alaska Department of Transportation, June, 2019.

PRESENTATIONS

- “[Is the Grouted Shear Stud Connection Durable in Cold Climates?](#)”. Bridge Engineering Institute Conference 2019 (BEI 2019), Honolulu, HI, USA, July 22-25, 2019.
- “[Characterizing Seismic Load History for Performance Based Design](#)”. 12th Canadian Conference on Earthquake Engineering (CCEE 2019), Quebec City, QC, Canada, June 17-20, 2019.
- “[Structural Performance of the GSS Connection](#)”. Research Workshop at Alaska Department of Transportation and Public Facilities, Juneau, AK, USA, May 6-8, 2019.
- “[Durability of Cementitious Grouts in Cold Climate](#)”. Research Workshop at Alaska Department of Transportation and Public Facilities, Juneau, AK, USA, May 6-8, 2019.
- “[Structural Consequences of Grout Deterioration in the GSS Connection](#)”. Structural Engineering and Mechanics Symposium at NC State University, Raleigh, NC, USA, March 1, 2019.

**HONORS and
AWARDS**

- *Preparing the Professoriate Completion Certificate*, North Carolina University, Raleigh, NC, USA, May 2019.
- *Graduate Student Association Travel Assistance Award*, North Carolina State University, Raleigh, NC, USA, July 2019.
- *College of Engineering Conference Travel Award*, North Carolina State University, Raleigh, NC, USA, June 2019.
- *Teaching Assistantship*, North Carolina State University, Raleigh, NC, USA, May 2019 to present.

- *Doctoral Student Grant*, North Carolina State University, Raleigh, NC, USA, June 2016 to May 2019.

- *Prime Minister's Scholarship for Undergraduate Studies*, Calicut, India, July 2007 to May 2011.

**PAPER
CO-REVIEWER**

- *Journal of Constructional Steel Research* November, 2019.

- *Transportation Research Board* September, 2019.

**MEMBERSHIPS
AND POSITIONS**

- *Student Member*, Earthquake Engineering Research Institute (EERI), USA, 2015 to present.

- *Student Member*, American Society of Civil Engineers (ASCE), 2018 to present.

- *Secretary*, EERI Student Chapter, NCSU, June 2019 to present.

- *Graduate Mentor*, RISE program for Undergraduate Research, NCSU, Summer 2019.

- *Graduate Advisor*, Team NCSU, EERI Seismic Design Competition, June 2018 to March 2019.

- *Student Representative to the Student Affairs Council*, National Institute of Technology Calicut, Calicut, India, Aug 2010 to May 2011.

**INVITED TALKS
and LECTURES**

- *Alaska Department of Transportation Workshop* "Durability of Cementitious Grouts in Cold Climate", Juneau, AK, USA, May 6-8, 2019.

- *Alaska Department of Transportation Workshop* "Structural Performance of the GSS Connection", Juneau, AK, USA, May 6-8, 2019.

- *EERI Seminar Series 2018* "Seismic Design of Buildings", Raleigh, NC, USA, October, 2018.

- *EERI Seminar Series 2017* "Structural Dynamics for Undergraduates", Raleigh, NC, USA, September, 2017.

- *Graduate Student Lecture*, "Probabilistic Seismic Hazard Analysis", Raleigh, NC, USA, January, 2019

**PROGRAM
CO-ORDINATION
and
ORGANIZATION**

- *EERI Guest Lecture* "Talk by Dr. Erica Fisher", November, 2019.

- *Undergraduate Research Promotion Event* "EERI NC State University" October, 2019.

- *Undergraduate Research Promotion Event* "EERI NC State University" March, 2019.

- *EERI Guest Lecture* "Talk by Dr. Anahid Behrouzi", September, 2018.

- *EERI Guest Lecture* "Talk by Dr. Benson Shing", August, 2018.

**OTHER
ACTIVITIES**

- Shake Table Demonstrations for Outreach and Awareness

- [Blogs, Tutorials, and Knowledge Sharing](#)

**SKILLS &
OTHERS**

- **Certifications:** Fundamentals of Engineering Exam, Preparing the Professoriate

- **Large-scale Testing:** Steel and Concrete Columns, FRP wet layup, Optotrak and DIC Instrumentation

- **Numerical Modeling:** OpenSees, Ruaumoko, Seismostruct, MATLAB, R
- **Programming Languages:** R, MATLAB, Tex, Tcl, Python
- **Statistical Learning:** Regression, Classification, Generalized Linear Models, Tree Based Methods