NHERI SIMCENTER PROGRAMMING BOOTCAMP

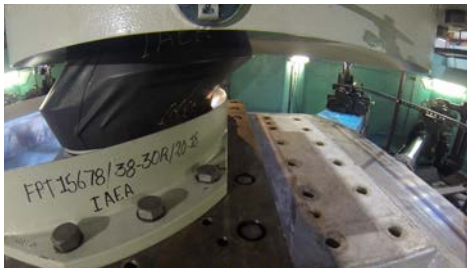
JULY 22 THROUGH 26, 2019, AT UC BERKELEY'S RICHMOND FIELD STATION

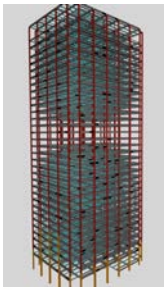
MATTHEW SCHOETTLER RESEARCH ENGINEER

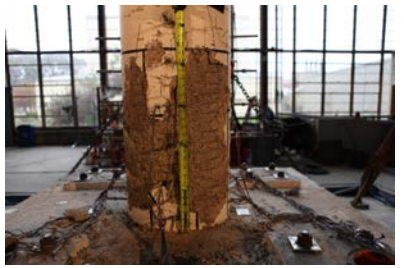
University of California, Berkeley

- Research activities include seismic design and retrofit of reinforced concrete buildings and bridges, evaluation of existing tall buildings, re-centering systems, and seismic isolation applications including nuclear power plants. The incorporation of innovative technologies for seismic hazard mitigation is of particular interest. Oh, and novel software development for the NHE community!

Fun fact: I've never had an advisor/boss pronounce my name properly.







ALI BAKHTIARI RESEARCH ASSISTANT AND PHD STUDENT

Florida International University

My name and family name together means Lucky Ali, I'm not sure it's funny but it's a fact ☺

- I'm originally from Tehran, Iran.
- I am completing my PhD in structural engineering at FIU. I am currently working on a project titled as "Full-Scale Experimentation and Computational Modeling to Mitigate Wind-Induced Vibrations and Their Effects on Curtainwall Window Systems".
- The ultimate goal of my research is to create a novel computational framework allowing numerical evaluation and effective design of curtainwall window systems to achieve high-performance buildings without future reliance on extensive physical testing.
- My passion is to learn software and application development skills.
- I consider civil engineering related software development as my future career.

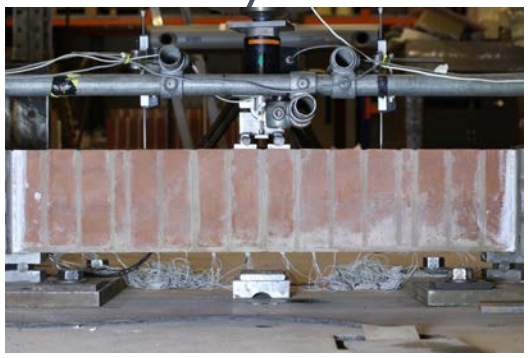
HAN LIU

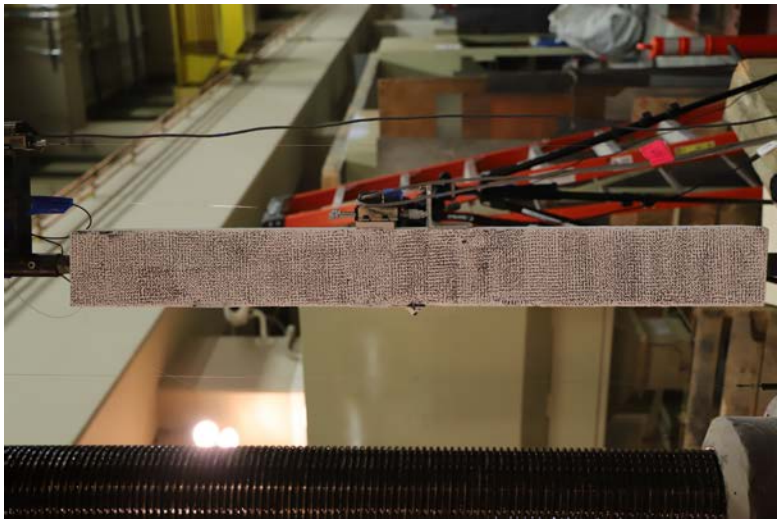
PHD STUDENT

University of California, Berkeley

Fun fact: My name is really easy to pronounce and remember

- Research activities contain fiber optic monitoring of concrete frame structures, including cracking and dynamic response, structural monitoring of cracking using Particle Image Velocimetry.





WILLIAM (ANDY) PASCO

RESEARCH ASSISTANT

CSULB

Fun fact: I have a scuba diving certification

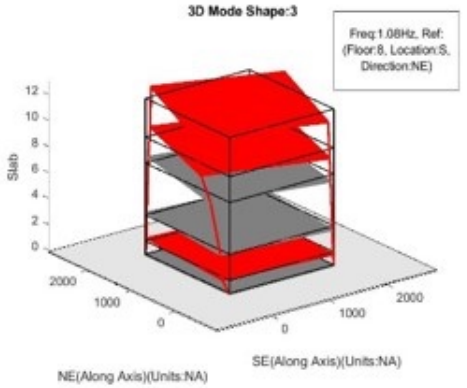
- I have lived in California my entire life, and my involvement with the ASCE steel bridge project is what initially fueled my passion in structural engineering.
- We are researching the post-earthquake loss in capacity of highway overpass bridges in California and the corresponding functionality, with a focus on the effects of residual drifts in the columns.
- I'm hoping to learn how to further utilize everything that DesignSafe offers.

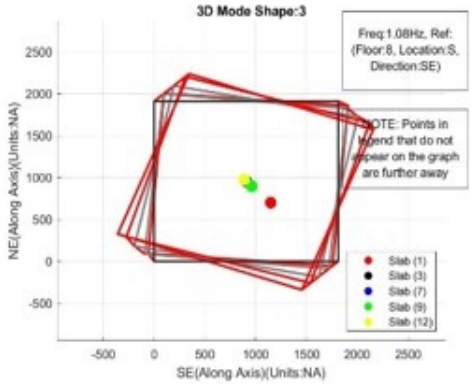
S. SINA YOUSEFIAN M. POSTDOCTORAL RESEARCHER

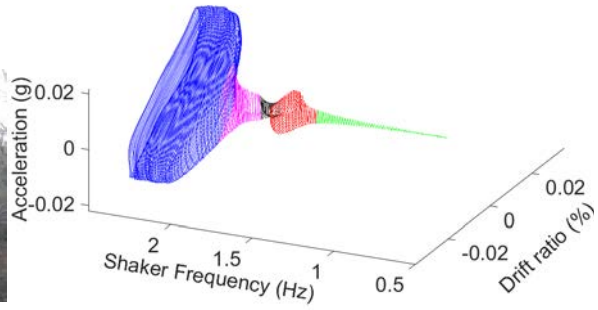
University at Buffalo

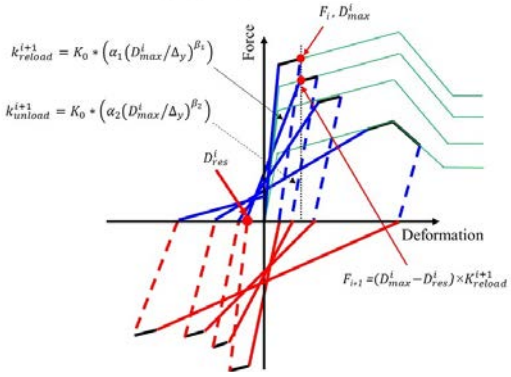
- My research involves large-scale dynamic testing, health monitoring, and retrofitting of existing RC structures. I also work on a regional seismic assessment framework for infilled RC buildings. I plan to implement the skills I learn in this Bootcamp to improve the performance of the framework.

Fun fact: My full name has the same number of letters as that of the English alphabet!







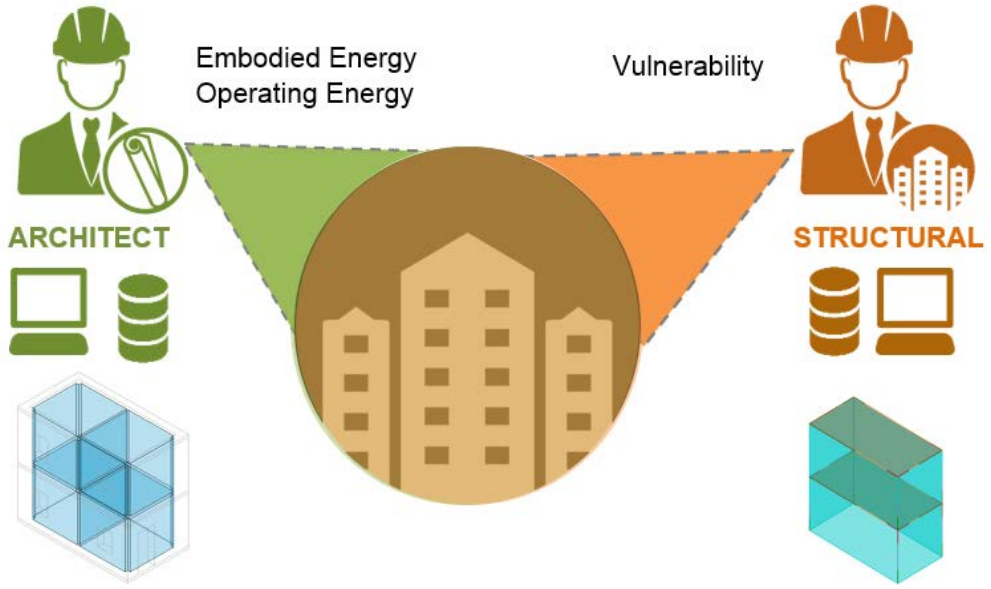


KAREN ANGELES CIVIL ENGINEERING PHD STUDENT

University of Notre Dame

Fun fact: I taught martial arts and fought competitively for 5 years

- Born and raised in (Southern) CA; B.S. Structural Engineering from UC San Diego
- Research interests: data-driven approaches to multi-hazard life-cycle performance evaluations. Research activities include the development of a practitioner-centered tool for integrated life-cycle analysis for the performance evaluation of resilient, sustainable buildings; data-driven workflow for performance-based wind engineering. Data gathering and open source software development.



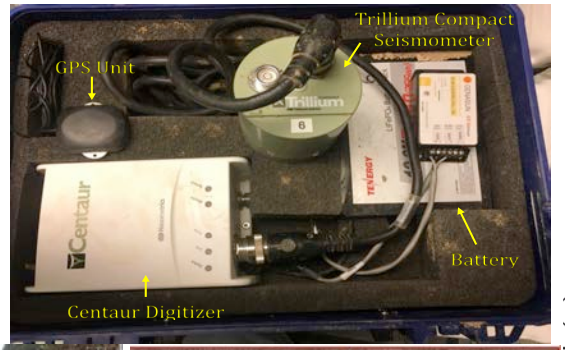
ASHRAF KAMAL HIMEL

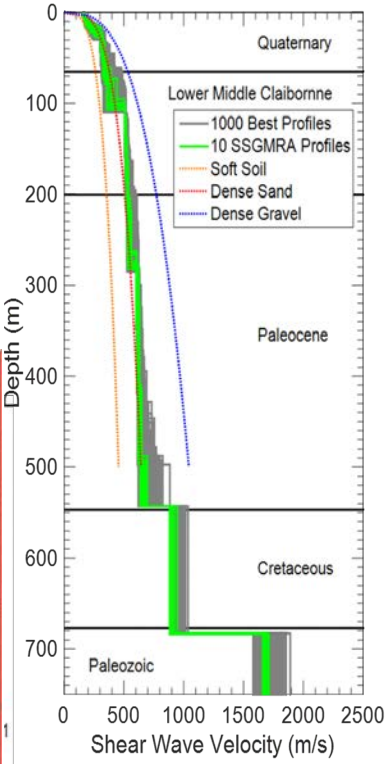
PhD Student

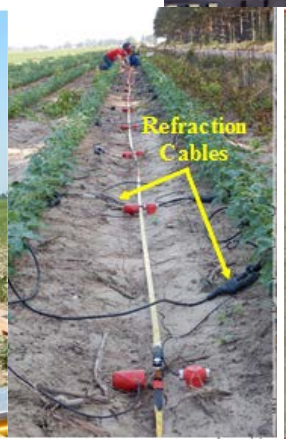
University of Arkansas, Fayetteville

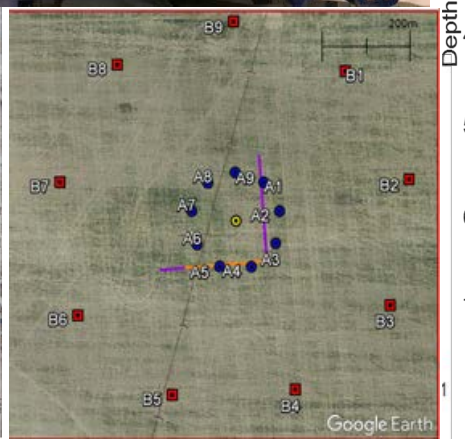
- My research activities include active and passive source surface wave methods, site response analysis, and site characterization using invasive and non-invasive methods.
- Interested to know more about high performance computing. Programming knowledge would further be an aid for developing software for the community.

Fun fact: Took me two days to realize, there is none!









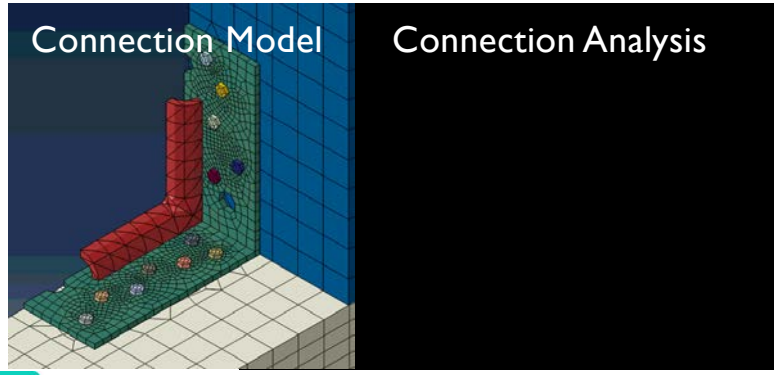
RAFAEL SALGADO

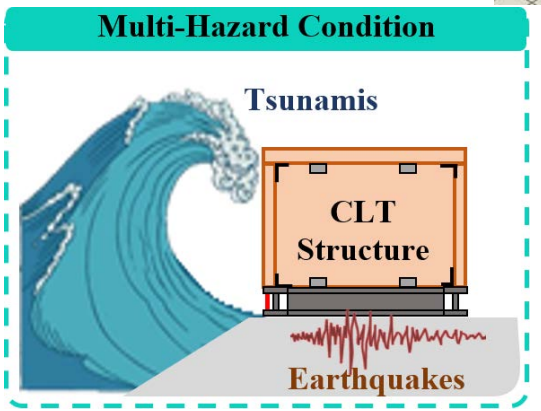
MULTI-HAZARD RESILIENCE OF CLT STRUCTURES

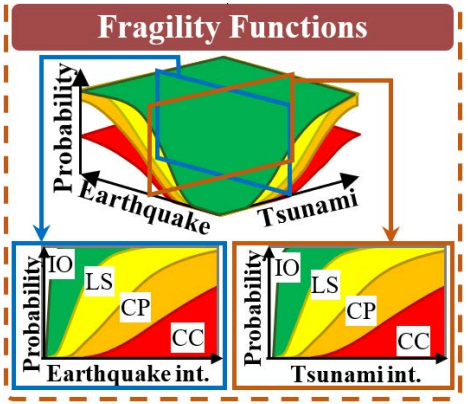
University of Toledo

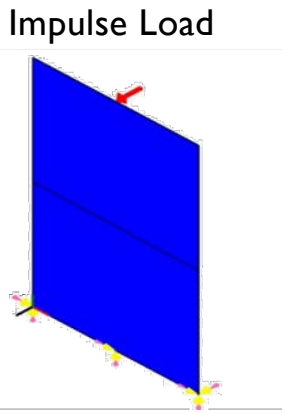
Fun fact: I eat ketchup with everything

- Research activities: numerical characterization of the out-of-plane behavior of CLT panels and connections, numerical derivation of constitutive models for CLT connections, evaluation of the performance of CLT buildings under multi-hazard scenarios, development of software to dynamically analyze CLT buildings under multi-hazard conditions and assessment of its performance using fragility curves.







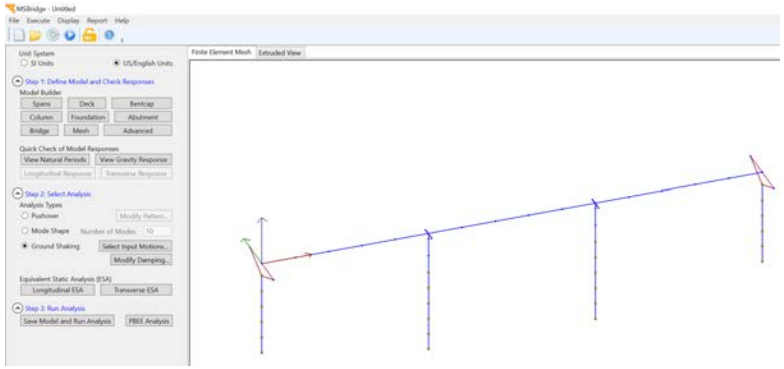


ROBERTO RODRIGUEZ RESEARCH INTERESTS: GEOTECH/STRUCTURES

Florida International University

Fun fact: Enjoys running and going to the beach

- Originally from Miami, FL. Graduated with master's in Geotechnical Earthquake Engineering from UCLA and Bachelor's from Florid International University.
- Work experience in geotechnical consulting firm and structural design of bridges.
- Research topic related to high speed rail modeling considering SSI. Goal is to create recommendations for design/modeling of HSR foundations.
- Utilizing Opensees platform, we hope to utilize direct and/or substructure approach in SSI model.
- Hope to obtain a better understanding of programming because greater problems can be tackled with some computing user interface. (e.g. MSBridge, OpenseesPL)



MSBridge User Interface

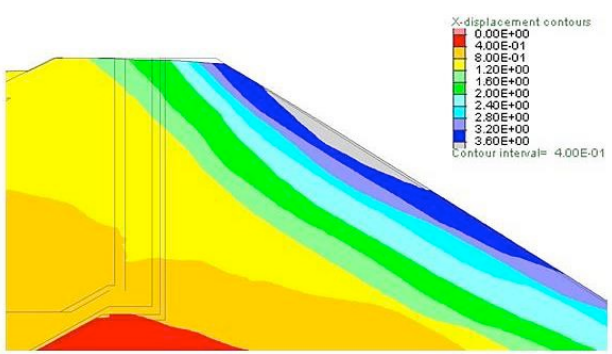
RENMIN PRETELL

Numerical Modeling of ground deformations at Balboa Blvd. in 1994 Northridge earthquake

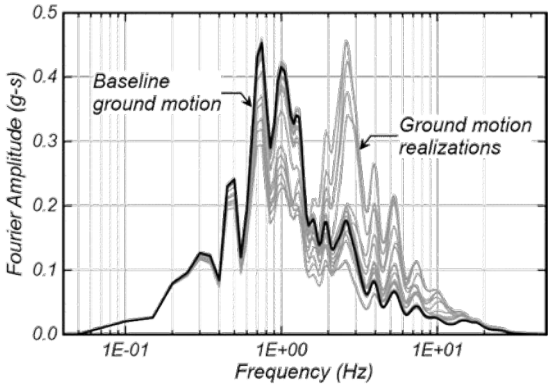
University of California, Davis

Fun fact: I love music from the 70s and 80s

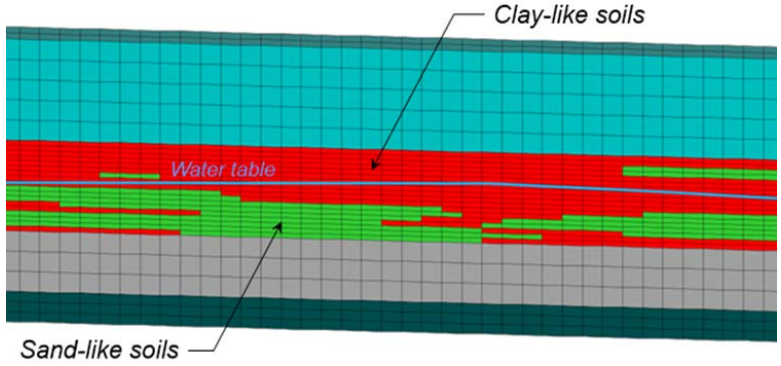
- Peruvian civil engineer, currently Ph.D. student at UC Davis, focused on geotechnical earthquake engineering (numerical simulations, liquefaction effects, ground motions, site response, etc.)
- My research consist of the numerical evaluation of a case history of seismic-induced ground deformations accounting for the uncertainties associated to the main input parameters.
- I am interested in developing geotechnical/seismic tools for research and applications.



Seismic induced horizontal displacements in a centerline tailings dam (Pretell and Dismuke 2016)



Suite of equally possible input ground motions for nonlinear deformation analyses (Pretell et al. 2019)



Sample window of the numerical domain illustrating spatial variability of soils (publication in progress).

SHANSHAN WANG ENGINEER

Berkshire Hathaway Specialty Insurance

Fun fact: Switched my major to Civil Engineering in Sophomore year due to my addition to "Prison Break"

- Currently an Engineer at an insurance company focusing on buildings/infrastructures' vulnerability to natural hazards.
- Came to the United States since 2012, and became a neighbor to Matt and Frank until 2017.
- Research focus with late Professor Steve Mahin is on enhancing seismic resiliency of high-rise buildings with various supplemental energy dissipation, and optimization design of dampers.
- My incentives of attending this workshop include 1). Explore ways to utilize SimCenter products in insurance industry; 2). Enhance my programing skills to 20% of Frank's level; 3). Bring back my graduate life experiences in RFS with old friends, and get to know new friends in NHE community.

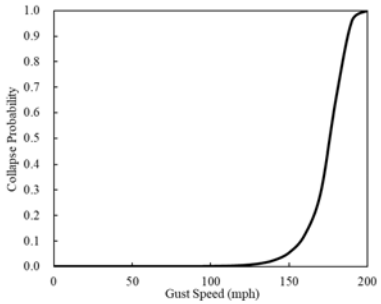
XINLONG DU

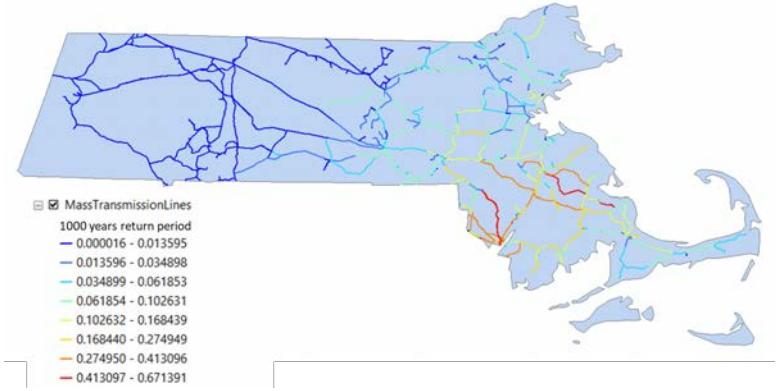
PHD CANDIDATE

Northeastern University

Fun fact: I watched *Friends* so many times.

- I'm from Shanxi, China.
- My research is about regional analysis of electrical transmission networks.
- First, I want to learn developing applications in C++ and the structure of OpenSees because I'm currently working on implementing a nonsymmetric beam element in OpenSees so that I can analyze structures like transmission towers. Second, I wan to learn Parallel Programming for High Performance Computing so that I can use parallel computing for the development of fragility curves. Third, I want to learn how to how to do regional simulations using SimCenter developed applications.





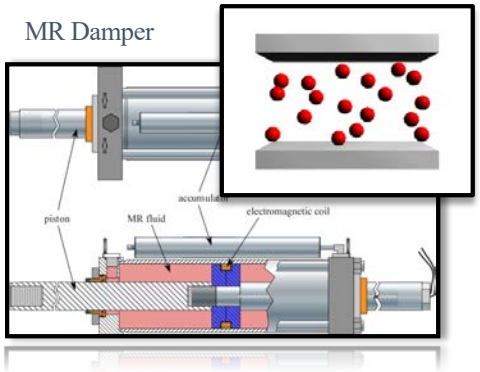
ZHAOSHUO JIANG ASSISTANT PROFESSOR

San Francisco State University

Fun fact: Challenge Matt on the most difficult name to pronounce ☺

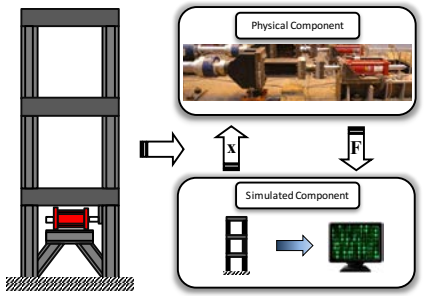
- Research interests: Smart structures technologies including structural control & health monitoring; Advanced experimental methods - real-time hybrid simulation; Optimized structural design – topology optimization; Technology-aided engineering education.

MR Damper



Health Monitoring

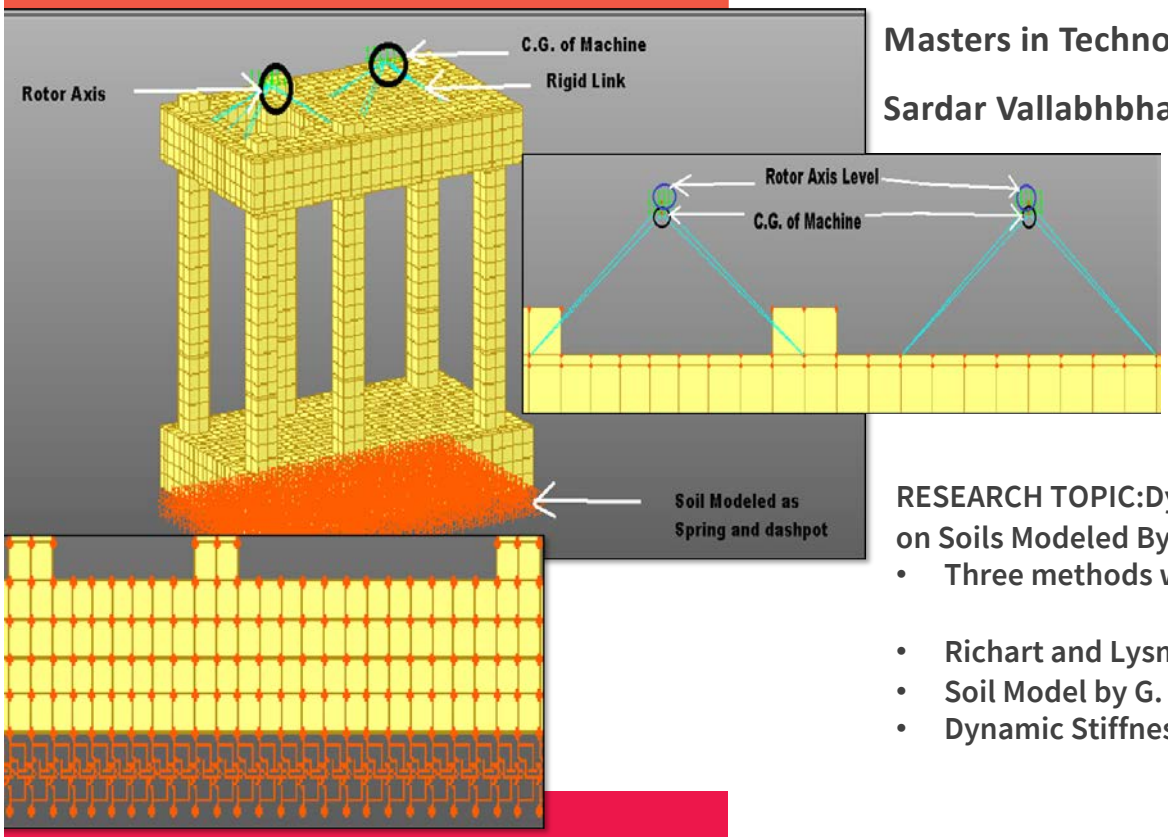
Real-time Hybrid Simulation



Mobile Remote Shake Table Lab

PhD Student

KANIKA LAMBA



Education : **Iowa State University**

Masters in Technology : Soil Mechanics and Foundation Engineering

Sardar Vallabhbhai National Institute of Technology, Surat, India

RESEARCH TOPIC:Dynamic Response Of Turbo Machine Frame Foundations on Soils Modeled By Approximate Methods

- **Three methods were compared :**

- **Richart and Lysmer's model (1970)**
- **Soil Model by G. Gazetas**
- **Dynamic Stiffness and Damping by Wolf's Cone Model Method**

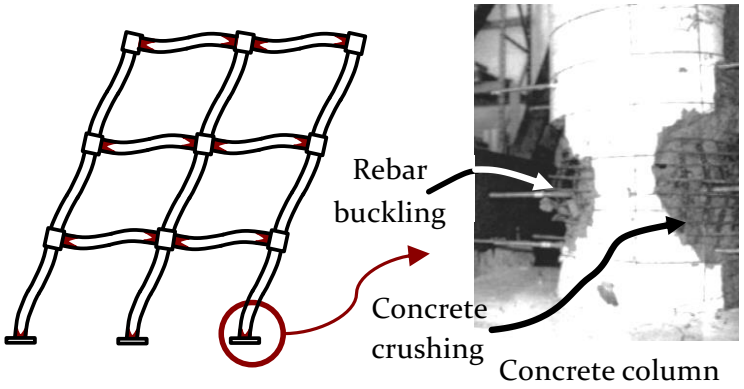
Fun fact: Involved with Graduate Society of Women Engineers

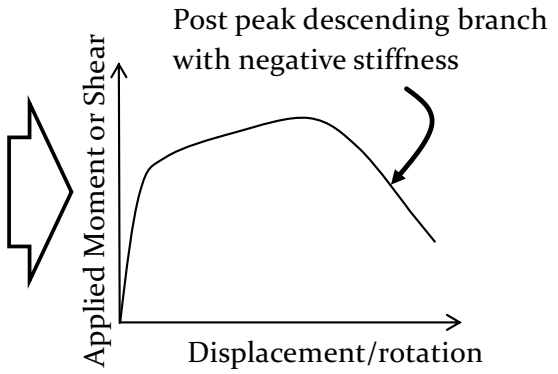
MAHA KENAWY POSTDOCTORAL SCHOLAR

University of Nevada, Reno

Fun fact: I am also a singer!

- My research is centered around performance assessment of reinforced concrete structures subjected to earthquakes. I am particularly interested in understanding and predicting extreme limit states in RC systems, such as structural collapse. My work is primarily theoretical and computational, and involves developing new numerical models and tools for nonlinear structural analysis.





SALMAN RAHIMI

PHD STUDENT

University of Arkansas at Fayetteville

Fun fact: I am Salman  not Salmon 

- I am originally from South Khorasan, Iran.
- My research mainly focus on influence of aging on soil penetration or liquefaction resistance and also applications of different geophysical techniques for infrastructure evaluation. We use a variety of geophysical methods such as seismic and resistivity methods.
- A part of our research is about site characterization from experimental geophysical data by solving an inverse problem. To do so, sometimes we have to run several million iterations to find a reasonable solution. So, the process is time consuming and we can use parallel processing to decrease the processing time. We typically use MATLAB for data processing, but it would be really helpful for me to learn more about other programming languages that we might use in near future. We have developed several Matlab codes for data processing that can be useful for NHE community.





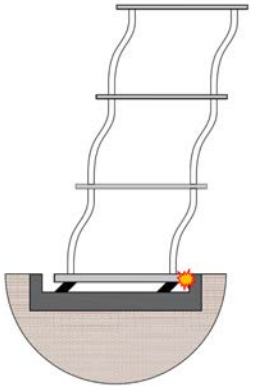
PATRICK HUGHES

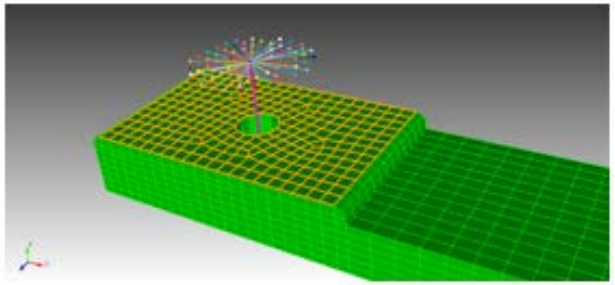
UC San Diego

Sandia National Laboratories

PHD STUDENT

- I am a 4th-year PhD student working under Prof. Gilberto Mosqueda. I also work part-time for Sandia National Laboratories.
- My research
  - **UCSD**: Numerical modeling of moat wall pounding in base-isolated buildings.
  - **SNL**: Projection-based model order reduction for structures with nonlinear contact & friction (modal analysis on steroids).
- This bootcamp will help me add user-defined subroutines to existing finite element codes.
- Hobbies
  - Video games (WoW, Super Smash Bros.)
  - Hanging out with Arnold (a dog)
  - Listening to Stephen King audiobooks
  - Trying new restaurants





FUN FACT:

At Phoenix Comic-Con 2014, Stan Lee complemented my Mr. Fantastic cosplay.

VICTOR CALDERON TIME DEPENDENT PERFORMANCE-BASED DESIGN

North Carolina State University

Fun fact: I can make good pupusas!

- Currently studying the effects of cumulative damage in RC Column bridges to Characterize the effect of cumulative damage in RC bridge structures and multiple ground motions into a generalized time dependent non-linear analysis.
- I expect to learn how to take advantage of the C and C++ language to customize my research needs in Opensees and to take the advantage of the HPC capabilities of Design Safe