

# Vikram V. Singan

37 Heath Street  
Buffalo, NY 14214

vvsingan@buffalo.edu  
(716)-380-0167

## EDUCATION

---

**Master of Science** (Structural & Earthquake Engineering) *Jun 10*  
University at Buffalo (UB), The State University of New York *GPA: 3.4/4.0*

**MS Project** : *Seismic qualification of suspended ceiling systems* *Jan10-May10*  
**Adviser** : Dr. Andrew S. Whittaker

Thirteen different ceiling systems provided and installed by Armstrong World Industries were tested in the Structural Engineering and Earthquake Simulation Laboratory (SEESL) at the University of Buffalo. Testing was carried out per the procedures set forth in ICC-ES-AC156 (ICC, 2007), "Acceptance Criteria for Seismic Qualification by Shake-Table Testing of Nonstructural Components and Systems". A detailed report presenting the test procedures, input motions and the seismic performance of the ceiling systems was prepared and submitted to Armstrong World Industries Inc.

## Course Work

Adv. Mechanics of Solids	Adv. Strl. Analysis	Strl. Dynamics-I
Finite Element Analysis	Adv. Finite Element Analysis	Strl. Dynamics-II
Reinforced Concrete Structures	Aseismic Base Isolation	Steel Structures
Adv. Mathematics for Civil Engineers		

**Bachelor of Engineering** (Civil Engineering) *Jun 02-Jun 06*  
Maharashtra Institute of Technology (MIT), University of Pune, India

## WORK EXPERIENCE

---

**Research Engineer**, University at Buffalo *Jun 10-Present*

- Design and detailing of a modular reinforced concrete reaction wall
- Design and detailing of a steel reaction frame
- Seismic qualification of a YMC<sup>2</sup> centrifugal chiller for Johnson Controls Inc.
- Seismic qualification of four chillers for Carrier Corporation
- Seismic qualification of a suspended ceiling system for Hunter Douglas Inc.
- Dynamic testing of two shock transmission units for Taylor Devices Inc.
- Seismic qualification of fifteen suspended ceiling systems for Armstrong World Industries Inc.
- Development of graduate-level course notes in blast engineering
- Reconfiguration of Ketter Hall Structural Engineering and Earthquake Simulation Laboratory (SEESL) test fixtures and hydraulics

**Research Assistant**, (University at Buffalo) *Aug 09-May 10*  
**Teaching Assistant**, (University at Buffalo) *May 09-Aug 09*  
**Systems Engineer**, IBM India Pvt. Ltd. Pune, India *Aug 06-Jul 08*  
**Project** : *CB Enablement*

- Design and coding of algorithms
- Packaging and installation of mainframe products like Z/OS, WAS, DB2, IMS, NCP and CICS
- Functional testing and system testing of new products of Z/OS V1R9 release

#### **ACADEMIC PROJECTS AT UB**

---

**Pushover analysis of a precast post-tensioned segmental bridge column** *Jan 10-May 10*

An analytical model of a precast post-tensioned segmental bridge column was developed in MATLAB; results were validated by ABAQUS analysis.

**Visual rapid screening of an existing building for potential seismic hazards** *Jan 09-Apr 09*

The potential seismic vulnerability of a university building was analyzed using FEMA-154. The results of the visual rapid screening were verified by response-history analysis using SAP2000. Retrofit methods were proposed to improve the seismic performance of the building.

**Base isolation of an Emergency Operation Centre (EOC)** *Jan 09-May 09*

A base isolation system was designed for an EOC building located in a region of high seismic hazard. Triple Friction Pendulum bearings were used for the isolation system. The design was checked by response-history analysis of the building for 7 ground motions, scaled per Section 17.3.2 of ASCE-7-05. The design of isolation system was checked for uplift, resistance to wind loads, and self centering of building.

#### **ACADEMIC PROJECTS AT MIT (INDIA)**

---

**Analysis of transient pressure in hydro electric power stations** *Jan 06-Jun 06*

Analysis was performed of transient hydraulic conditions (waterhammer) in piping in a power plant operated by Central Water and Power Station.

**Development length of reinforcing bars** *Jun 05-Dec 05*

The development length provisions of Indian Code (CL 26.2.1 of IS 456) did not consider many factors affecting the development length of bars such as coating on bars, spacing of bars, and type of concrete. A comparison was made with the development length provisions of ACI 318.

#### **PUBLICATIONS**

---

1. Singan, V. V., and Whittaker, A. S., 2010. "Seismic Qualification Testing of Suspended Ceiling Systems, A Study for Armstrong Building Products Operations", Part

- XVII, Report No. UB CSEE/SEESL-2010-04, State University of New York at Buffalo, Buffalo, New York, May
2. Singan, V. V., Whittaker, A. S. and Pitman, M., 2010. "*Seismic Qualification of YMC<sup>2</sup> Centrifugal Chiller Equipped with Neoprene Pad Mounts and a Vibration Isolation System*", Report No. UB CSEE/SEESL-2010-10, State University of New York at Buffalo, Buffalo, New York, October
  3. Singan, V. V., Whittaker, A. S. and Pitman, M., 2010. "*Seismic Qualification of 30RB 60, 30RB 300, 23XR Frame 3 and 23XR Frame 5 Chillers of Carrier Corporation*", Report No. UB CSEE/SEESL-2010-11, State University of New York at Buffalo, Buffalo, New York, October
  4. Singan, V. V., and Whittaker, A. S., 2010. "*Seismic Qualification Testing of a Suspended Ceiling System, A Study for Hunter Douglas Ceiling Products*", Part I, Report No. UB CSEE/SEESL-2010-13, State University of New York at Buffalo, Buffalo, New York, November
  5. Singan, V. V., and Whittaker, A. S., 2010. "*Seismic Qualification Testing of Suspended Ceiling Systems, A Study for Armstrong Building Products Operations*", Part XVIII, Report No. UB CSEE/SEESL-2010-16, State University of New York at Buffalo, Buffalo, New York, December
  6. Singan, V. V., and Whittaker, A. S., 2011. "*Thermal and Dynamic Testing of Taylor Devices Shock Transmission Units*", Report No. UB CSEE/SEESL-2011-01, State University of New York at Buffalo, Buffalo, New York, March

## **COMPUTER SKILLS**

---

**Software** : SAP2000, ABAQUS, MATLAB, XTRACT, DADiSP, AUTOCAD, LaTeX  
**Languages** : C, PL1, REXX, JCL

## **MEMBERSHIPS**

---

- American Institute of Steel Construction (AISC)
- American Concrete Institute (ACI)
- Earthquake Engineering Research Institute (EERI)