

# CURRICULUM VITAE

## Orlando Cundumi Sánchez

Mailing address:

Condominio River Park  
Apartment J-208  
Bayamón, Puerto Rico 00960

Phone and e-mail:

Phone 787-222-0293

Email: [ocundumi@caribbean.edu](mailto:ocundumi@caribbean.edu)  
[ocundumi@hotmail.com](mailto:ocundumi@hotmail.com)

### EDUCATION

**PhD, Civil Engineering (Structures);** November 2005.

University of Puerto Rico, Mayagüez, Puerto Rico, USA

Major: Structural Engineering

Courses: Finite Element Analysis of Structures, Design of Steel Structures I, Design of Steel Structures II, Analyses of design of deep foundation, Analyses of structural systems in the non linear regime, Soil dynamics, Shear strength of soils and stability of soil structures, Analyses and design of plate and shell, Non linear vibrations.

Thesis: A variable damping semiactive device for control of the seismic response of buildings.

Advisor: Dr. Luis E. Suárez

**Master of Science, Civil Engineering (Structures);** December 2002

University of Puerto Rico, Mayagüez, Puerto Rico, USA

Major: Structural Engineering

Courses: Advanced structural analyses, Reinforced Concrete Structures I, Plain and Reinforced Concrete II, Design of Structures for Dynamic Loads I, Advanced Design of Structures for Dynamic Loads II, Foundation Engineering, Theory of Elastic Stability, Graduate Seminars on Applied Mechanics, Theory of Elasticity, Numerical Mathematical Analysis, Earthquake Engineering.

Thesis: Analyses and Numeric Simulations of the Seismic Response of the Building-Rail-Counterweight Coupled System Three-dimensional of an Elevator.

Advisor: Dr. Luis E. Suárez

**Specialization in Engineering, Structural Engineering** (2 year program – 10 graduated courses)

University of Valle (Universidad del Valle), Cali, Colombia

**Bachelor of Science Civil Engineering** (5-years program)

University of Valle (Universidad del Valle), Cali, Colombia

## EMPLOYMENT RECORD

January 2006 - Present	Caribbean University, Director and Professor of Engineering Department
December 2002 – Dec 2005	University of Puerto Rico at Mayagüez, Graduate research assistant
May 2001 – December 2002	University of Puerto Rico at Mayagüez, Teaching and research assistant (M.Sc)
October 1996 – May 2001	Structural engineer consultant, Palmira, Valle, Colombia
October 1996 – May 2002	Part-time lecturer, Calculus, Physics, Mathematical.
Oct. 1990 - December 1996	Municipality of Palmira, Municipal Engineer, Palmira, Valle, Colombia
Sept. 1985 - Sept. 1990	Student University of Valle, Cali, Colombia, and monitor (Static, Concrete and Structural Analysis)
June 1989 – August 1990	Cajiao, Solarte, & Assoc. Ltd., Cali, Colombia, Structural engineer assistant

## HONORS AND AWARDS

- Medal for Best Student, High school, College of Cardenas, Palmira, Colombia, 1982
- Colombian Mathematics Junior Olympic Team, 1980-1982.

## RESEARCH EXPERIENCE

**Graduate Research Assistant**, Department of Civil Engineering, University of Puerto Rico, Mayagüez, PR, USA. May 2001 – December 2002. Advisor: Prof. Luis E. Suárez.

- MS Research involved dynamic analyses and numeric simulations of the seismic response of the building-rail-counterweight coupled system three-dimensional of an elevator. This research project was funded by MCEER at the University of Buffalo.

**Graduate Research Assistant**, Department of Civil Engineering, University of Puerto Rico, Mayagüez, PR, USA. Summer 2002. Advisor: Prof. Luis E. Suárez.

- Synthetic earthquake generation using the program SIMQKE. Design spectra were generated for different soil conditions.

**Graduate Research Assistant**, Department of Civil Engineering, University of Puerto Rico, Mayagüez, PR, USA. Spring 2003. Prof. Ricardo López.

- Flexural capacity of several beams made of Puerto Rican woods. This study involved design and implementation of several 4-point bending tests of beams 9 and 18 ft long, 14 to 15-inch tall.

**Graduate Research Assistant**, Department of Civil Engineering, University of Puerto Rico, Mayagüez, PR, USA. Summer 2004. Prof. Ricardo López.

- Moment-Curvature Diagrams for Nonrectangular Walls Under Multi-Directional Loads

**Graduate Research Assistant**, Department of Civil Engineering, University of Puerto Rico, Mayagüez, PR, USA. Advisor: Prof. Luis E. Suárez.

- Studies of energy dissipation systems for passive and active vibration control of civil structures.

## TEACHING EXPERIENCE

**Lecturer**, Department of General Engineering, University of Puerto Rico, Mayagüez, PR, USA.

- Instructor for the undergraduate course in Fortran.
- Instructor for the undergraduate courses in Dynamic of Structures.
- Instructor for the undergraduate courses en Mechanic of Structure I.
- Instructor for the undergraduate courses en Mechanic of Structure II.

**Lecturer**, Department of Engineering, Caribbean University, Bayamón, PR, USA.

- Instructor for the undergraduate course in Structural Analysis I and II.
- Instructor for the undergraduate courses in Dynamic of Structures.

**Teaching Assistant**, Department of Civil Engineering, University of Puerto Rico, Mayagüez, PR, USA.

- Assistant for the undergraduate course on **Reinforced concrete** (INCI 4019). Duties include grading, prepare solutions, and student office hours.
- Assistant for the graduate course on **Advanced reinforced concrete** (INCI 6026). Duties include grading, prepare solutions, and student office hours.
- Assistant for the undergraduate course on **Mathematical method in civil engineering** (INCI 4095). Duties include grading, prepare solutions, and student office hours.
- Assistant for the undergraduate course on **Visual Basic** (INCI 4095). Duties include grading, prepare solutions, and student office hours.

## RESEARCH INTERESTS

- Dynamic of Structures.
- Seismic Analysis of Structures.
- Dynamic Analysis of Secondary Element.
- Energy Dissipation Systems for Vibrations Control.
- Nonlinear Analysis of Structures.
- Soil Dynamics.
- Earthquake Engineering.

## PUBLICATIONS

- Nonlinear Analysis of Structures Controlled With A New Variable Damping Device  
Orlando Cundumi S.  
14<sup>th</sup> World Conference on Earthquakes Engineering – 14WCEE 2008  
Beijing, China, 12-17 October 2008

- Application of a Variable Damping Semi Active Device for the Mitigation of the Seismic Response of Adjacent Structures  
Orlando Cundumi S. and Luis E. Suárez  
Computer-Aided Civil and Infrastructure Engineering - An International Journal
- A New Variable Damping Semi-Active Device Seismic Response Reduction of Civil Structures  
Orlando Cundumi S. and Luis E. Suárez  
Journal of Mechanics of Materials and Structures, Vol. 2, No. 8, 2007.
- Seismic Response Reduction of Stand-Alone and Coupled Structures Using a Variable Damping Device and Semi-Active Control Algorithm  
Orlando Cundumi S. and Luis E. Suárez  
Computational Methods in Structural Dynamics and Earthquake Engineering - COMPDYN 2007  
Rethymno, Crete, Greece, 13–16 June 2007
- Seismic Response Reduction Using Semi-Active Control With A New Variable Damping Device And Modified Algorithm  $Q_v$   
Orlando Cundumi S. and Luis E. Suárez  
Eight U.S. National Conference on Earthq. Engineering, San Francisco, California, April 18-22, 2006.
- Reducción de la Respuesta Sísmica en Estructuras Usando un Nuevo Equipo de Control Semiactivo y Algoritmos de Control  
Orlando Cundumi S. and Luis E. Suárez  
Congreso Internacional de Ingeniería Sísmica, Cali-Colombia, Nov. 16-18 2005.
- Respuesta Sísmica del Sistema Acoplado Edificio-Rieles-Contrapeso de un Ascensor.  
Orlando Cundumi S. and Luis E. Suárez.  
Congreso Internacional de Ingeniería Sísmica, Medellín-Colombia, Nov. 2003.
- Simulación Numérica de la Respuesta Sísmica del Sistema Tridimensional Acoplado Edificio-Rieles-Contrapeso de un Ascensor.  
Orlando Cundumi S. and Luis E. Suárez.  
Revista Internacional de Desastres Naturales, Accidentes e Infraestructura Civil, Vol. 3, Num. 1, Mayo del 2003.
- Applications of Synthetic Earthquakes Accelerograms in Ground Response Analysis.  
Orlando Cundumi S., Luis A. Montejó and Luis E. Suárez.  
Sigma Xi, VIII Poster Day, April 2003.

## COMPUTER SKILLS

- SAP2000 V10 NL, ETABS V10 NL, COSMOS, MathCAD, MatLab, MapleV, Visual Analysis, SHAKE2000, AutoCad, RAM, Abaqus.

## AFFILIATIONS

- Earthquake Engineering Research Institute (EERI).
- Asociación de Ingeniería Sísmica de Colombia (AIS).

**Orlando Cundumi Sánchez**