

# Carlos A. Vanegas

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Graduate Student and Research Assistant  
Department of Computer Science  
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## Career Goal

Conduct research that advances the state-of-the-art in Computer Graphics and Computational Geometry.

## Education

**Ph.D. Student** (Expected May 2012)  
Department of Computer Science, Purdue University, West Lafayette, IN, USA.

**B.Sc. Mathematical Engineering** (11-Semester Program) (June 2007)  
EAFIT University, Medellín, COLOMBIA (Ranking: 2 out of 148).

## Experience

**Department of Computer Science,** (Jul 2007-Present)  
**Purdue University, West Lafayette, IN, USA**  
Graduate Research Assistant, Computer Graphics and Visualization Lab. *Advisor:* Prof. Daniel Aliaga, PhD.  
*Projects:* Urban Modeling and Visualization (<http://www.cs.purdue.edu/cgvlab/projects/urban.shtml>)

**EAFIT University, Medellín, COLOMBIA** (Jan 2004-Jul 2007)  
Undergraduate Research Assistant, CAD/CAM/CAE Laboratory. *Advisor:* Prof. Oscar E. Ruiz, PhD.

**University of Vigo, Vigo, SPAIN** (Jan-Jul 2005, Feb-Jul 2006)  
Visiting Research Assistant, Department of Industrial Engineers. *Advisor:* Prof. Xoan A. Leiceaga, PhD.

**EAFIT University, Medellín, COLOMBIA** (Jan-Dec 2003)  
Research Assistant, Department of Geology. *Advisor:* Prof. Juan D. Restrepo, PhD.

## Publications

### Refereed Papers

- C. Vanegas, D. Aliaga, B. Benes, P. Waddell, "Interactive Design of Urban Spaces using Geometrical and Behavioral Modeling", **ACM Transactions on Graphics** (also in Proceedings SIGGRAPH Asia), 28(5), 2009.
- C. Vanegas, D. Aliaga, P. Mueller, P. Waddell, B. Watson, P. Wonka, "Modeling the Appearance and Behavior of Urban Spaces", **Computer Graphics Forum** (also in Eurographics 2009 State-of-the-Art Reports), 2009.
- C. Vanegas, D. Aliaga, B. Benes, P. Waddell, "Visualization of Simulated Urban Spaces: Inferring Parameterized Generation of Streets, Parcels, and Aerial Imagery", **IEEE Transactions on Visualization and Computer Graphics**, 15(3):424-435, 2009.
- D. Aliaga, C. Vanegas, B. Benes, "Interactive Example-Based Urban Layout Synthesis", **ACM Transactions on Graphics** (Proceedings SIGGRAPH Asia), 27(5), 2008.
- D. Aliaga, B. Benes, C. Vanegas, N. Andryscio, "Interactive Reconfiguration of Urban Layouts", **IEEE Computer Graphics and Applications** (Special Issue on Urban Modeling), 28(3):38-47, 2008.

O. Ruiz, C. Vanegas C, "Statistical Assessment of Global and Local Cylinder Wear", **IEEE International Conference on Industrial Informatics**, 1:387-392, **2007**.

O. Ruiz, C. Vanegas, C. Cadavid, "Principal Component and Voronoi Skeleton alternatives for curve reconstruction from noisy point sets", **Journal of Engineering Design**, 18(5):437-457, **2007**.

X. Leiceaga, O. Ruiz, C. Vanegas, M. Rodríguez, J. Prieto, E. Soto, "Bi-Curve And Multi-Patch Smoothing with Application to the Shipyard Industry", **Congresso XVI ADM-XIX INGEGRAF**, 1:415-424, **2007**.

O. Ruiz, C. Vanegas, "Piecewise Linear Curve Reconstruction from Point Clouds", **TMCE (Tools and Methods of Competitive Engineering)**, 1:285-298, **2006**.

## Distinctions and Awards

**Purdue Computing Research Institute Special Incentive Research Assistantship, 2009**

**Purdue College of Science Graduate Student International Travel Grant, 2009.**

**Purdue LaFaSA Outstanding Student Poster Presentation Award, 2008.**

**Purdue Research Foundation Assistantship, 2008.**

**Procter & Gamble *Prest&Gio* Award, 2006.** Academic and leadership scholarship.

**Research Internship Award, 2005, 2006.** Granted by the European Union through INTERREG funds.

**ACM Certificate of Achievement, 2005, 2006.** Participation in the ICPC South America.

**Honor Scholarship, 2002.** Awarded by EAFIT University to the student with the highest GPA.

**Andrés Bello Scholarship (Physics), 2001.** Undergraduate scholarship awarded by the Ministry of Education of Colombia to top 0.05% scores in each subject area of the ICFES test for high school graduates.

**First Place, EAFIT University Mathematics and Physics Contest, 2001.**

## Teaching Experience

**Department of Computer Science, Purdue University, West Lafayette, IN, USA.**

CS334: Fundamentals of Computer Graphics – Teaching Assistant (Spring **2008**)

CS240: Programming in C – Teaching Assistant (Fall **2007**)

**Department of Mechanical Engineering, EAFIT University, Medellín, COLOMBIA**

IM024: Introduction to CAD/CAM Systems - Teaching Assistant (Spring, Summer **2004**)

## Programming Skills

C/C++, OpenGL, Graphics programming, TCP and network programming, Windows, UNIX, MATLAB.

## Languages

**English:** Fluent (115/120 TOEFL iBT), **Spanish:** Native, **French:** Advanced, **German:** Basic

## Research Interests

**Computer Graphics:** Interactive Modeling and Visualization of Urban Spaces, Procedural Modeling, Shape Reconstruction, Applied Stochastic Geometry.

**Others:** Mathematical Modeling of Physical Processes, Urban Planning, Geographic Information Systems, Dynamical Systems and Control.