

# Carlos Villegas

Nationality: Mexican

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Work Permit for Ireland (Third Level Graduate Scheme)

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## EDUCATION

- Nov 2004 – to date **Ph.D. in Electrical Engineering** - expected graduation date: November 2008  
*Hamilton Institute* at NUI Maynooth (Co. Kildare, Ireland)  
Development of Integrated Controllers for passenger vehicles in collaboration with *Daimler Research* as part of the EU project **CEmACS**; Development of Decentralized Control Methodology based on Passivity; Design of Adaptive Active Suspension design with decoupled Comfort and Handling; Rear-wheel Steering Application to increase Safety and Handling.
- Sep 2002 – **Master of Science in Mechatronics**  
Aug 2004 *CINVESTAV-IPN* (Mexico City, Mexico)  
Non-linear control, robotics, real-time programming, dynamic systems modelling, computer architecture, CAD/CAM/CAE, sensors and actuators, advanced mathematics. Master Thesis at DaimlerChrysler AG entitled “Influence of an Active Suspension System on the Lateral Dynamics of a Passenger Vehicle”.
- Sep 1997 – **Mechanical-Electrical Engineer**  
May 2002 *ITESM Campus Ciudad de México* (Mexico City, Mexico)
- Sep 2000 – **Exchange program in France**  
Jun 2001 *EPF Ecole d’Ingénieurs*. (Sceaux, France)  
Vehicle dynamics, finite element method, sheet metal forming, fatigue and crack propagation, metallurgy, composite materials.

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## INTERNSHIPS IN EUROPE

- Jun 2006 – *Google*  
Jul 2006 Develop and test improvements to the boot time of Linux-Debian as part of the *Google summer of code 2006*
- Sep 2003 – *DaimlerChrysler AG* (Esslingen, Germany)  
May 2004 Influence of an Active Suspension System on the Lateral Dynamics of a Passenger Vehicle. This includes the influence on the ESP (Electronic Stability Program) control system.
- Jan 2001 – *Bureau Veritas*. (Paris-La Défense, France )  
Jun 2001 Revision and improvement of rules for fatigue strength of welded ship structures.

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## INTERNSHIPS IN MEXICO

- Jun 2002 – *Graduaciones Tauro* (Mexico City)  
Aug 2002 Jewelry manufacturer. Member of the management board. The tasks included production control, deal with workers and supervise sales.
- Jun 2000 – *Beutelspacher* (Mexico City)  
Aug 2000 Plastic extrusion and blow molding machines manufacturer. Design, drawing and production of machine parts and molds.
- Jun 1999 – *General Motors de México* (Toluca City)  
Aug 1999 Revision of Mexican vehicle standards and creation of an international database.

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#### SOFTWARE

Matlab / Simulink / dSpace ControlDesk  
RTAI Linux hard real-time programming  
C / Perl / HTML  
Pro-Engineer, Unigraphics / Mechanical Desktop: CAD/CAM/CAE  
CASTEM 2000 / Visual Nastran: Finite-Element-Method

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#### LANGUAGES

**Spanish** mother tongue  
**English** fluent (TOEFL score 630)  
**French** fluent  
**German** intermediate

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#### SELECTED ACCOMPLISHMENTS

2008	<b>IT</b> Irish Patent Application P88405IE00 "A Method and System For Providing A Text Messaging Service" (inventor).
2003	<b>Control Engineering</b> Differential flatness controller of rotatory inverted pendulum with 50ms hard real-time.
2002	<b>Machine-Design</b> Extrusion machine design and construction. Injection molding design.
2000	<b>Business</b> Winner business plan at Entrepreneurship Contest ITESM-CCM
1998-1999	<b>Aeronautics</b> President of the Experimental Aviation School Association. Production of mono-plane/ Free flight contest organization.
1998	<b>Car Design</b> Construction of an off road vehicle for SAE Minibaja contest in El Paso, Texas.
1997	<b>Submarine-Design</b> Second place in Submarine Design ASME Contest in Mexico City.

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#### HOBBIES

Swimming, football, history, arts, open-source programming.

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#### REFEREES

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