

IGNACIO GARCIA DORADO

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Summary

- Research engineer at Google Research.
 - Ph.D. in Computer Science (Purdue University, U.S.A.); M.Sc. in Computer Science (Purdue University, U.S.A.); M.Sc. in Computer Engineering (LTH, Sweden); M.Sc. in Electrical Engineering (UPM, Spain).
 - Extensive computer training, including knowledge of multiple languages (C, C++, C#, WPF, Java, Python, Android, Perl, OpenGL, Matlab, OpenCV) and operating systems.
 - Formerly, research assistant at Purdue and U.C. Berkeley, research intern at NVidia, research assistant at McGill University, and software engineer in European Space Agency.
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Education

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| Ph.D. | Computer Science <i>Purdue University, West Lafayette (USA)</i> Thesis: "Smart cities: Inverse design of 3D urban procedural models with traffic and weather simulation". | 2010- 2015 |
| M.Sc. | Computer Science (2-year degree) <i>Purdue University, West Lafayette (USA)</i> Thesis: "Customizing Imagery to Improve Visual Acuity". | 2010-2014 |
| | Computer Science & Engineer (4.5-year degree) <i>LTH Lund University, Lund (Sweden)</i> Thesis: "Focused Crawler: algorithm survey and new approaches with a manual analysis". | 2006-2008 |
| | Electrical Engineer (5-year degree) <i>Polytechnic University of Madrid, Madrid (Spain)</i> | 2002-2006 |

Distinctions and Scholarships

- **Elevate Ventures Award:** March 2015. Awarded by *Purdue Foundation*.
 - **Schurz Innovation Challenge:** 1st Price. December 2014.
 - **Bilsland Dissertation Fellowship:** 1-year support, 2012. Awarded by *Purdue Univ.*
 - **Purdue Research Foundation Fellowship:** 1-year support, 2012. Awarded by *Purdue Univ. Computer Science*.
 - **Fulbright Scholarship:** 2-year full support, 2010 and 2011. Awarded by the *U.S. Department of State*.
 - **Grand NCE Foundation Grant:** half-year support, 2010. Awarded by the *Canadian Government*.
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Publications

- **BLADE: Filter learning for general purpose computational photography.** Pascal Geteuer, Ignacio Garcia-Dorado, John Isidoro, Sungjoon Choi, Frank Ong, Peyman Milanfar. *Proceedings of International Conference on Computational Photography (ICCP), 2018*
- **Graphic Narrative with Interactive Stylization Design.** Ignacio Garcia-Dorado, Pascal Getreuer, Madison Le, Robin Debreuil, Alex Kauffmann, Peyman Milanfar. *Submitted to Computer Graphics Forum Journal, 2018.*
- **Fast Weather Simulation for Inverse Procedural Design of 3D Urban Models.** Ignacio Garcia-Dorado, Daniel Aliaga, Prashanth Bhalachandran, Paul Schmid, Dev Niyogy. *Proceedings of SIGGRAPH; also ACM Transactions on Graphics (TOG), 36:2, 19 pages, 2017.*
- **Inverse Procedural Weather Design for 3D Urban Models.** Gen Nishida, Ignacio Garcia-Dorado, Daniel Aliaga, Bedrich Benes, Adrien Bousseau. *Proceedings of SIGGRAPH; also ACM Transactions on Graphics (TOG), 35:4, 11 pages, 2016.*
- **Example-Driven Procedural Roads.** Gen Nishida, Ignacio Garcia-Dorado, Daniel Aliaga. *Computer Graphics Forum (CGF), 12 pages, 2015.*
- **Total Variation Approach for Customizing Imagery to Improve Visual Acuity.** Ignacio Garcia-Dorado*, Carlos Montalto*, Daniel Aliaga, Manuel Oliveira, Feng Meng. *Proceedings of SIGGRAPH, Los Angeles, USA; also ACM Transaction on Graphics (TOG) 34:3, Article 28, 13 pages, 2015.*

- **Displaying Personalized Imagery for Improving Visual Acuity.** Daniel Aliaga, Carlos Montalto, Ignacio Garcia-Dorado. *U.S. Patent US20150269434, publication date May 2015.*
- **Designing Large-Scale Interactive Traffic Animations for Urban Modeling.** Ignacio Garcia-Dorado, Daniel Aliaga, Satish Ukkusuri. *Proceedings of Eurographics (EG), Strasbourg, France; also Computer Graphics Forum Journal (CGF), 33:2, 10 pages, 2014.*
- **Automatic Urban Modeling using Volumetric Reconstruction with Surface Graph Cuts.** Ignacio Garcia-Dorado, Ilke Demir, Daniel Aliaga. *Computer & Graphics Journal (C&G), 37:7, 15 pages, 2013.*
- **Automatic Modeling of Planar-Hinged Buildings.** Ignacio Garcia-Dorado, Daniel Aliaga. *Proceedings of Eurographics (EG), Girona, Spain; 4 pages, 2013.*
- **Evaluation of Shape Grammar Rules for Urban Transport Network Design.** Basil Vitins, Ignacio Garcia-Dorado, Carlos Vanegas, Daniel Aliaga, Kay Axhausen. *Proceedings of 91st Transportation Research Board, Washington DC; 19 pages, 2013.*
- **Inverse Design of Urban Procedural Models.** Carlos Vanegas, Ignacio Garcia-Dorado, Daniel Aliaga, Paul Waddell. *Proceedings of SIGGRAPH; also ACM Transactions on Graphics (TOG), 31:6, 10 pages, 2012.*
- **Fully Automatic Multi-Projector Calibration with an Uncalibrated Camera.** Ignacio Garcia-Dorado and Jeremy Cooperstock. *Proceedings of CVPRW (PROCAMS), Colorado Springs, Denver; 8 pages, 2011.*

Experience

Research Engineer

Dec 2015-Present

Google Research, Mountain View (USA)

Research on Computational Imagining.

- Technical Leader on “[Storyboard](#)” Google Research app, innovative application to convert videos into stylized storyboards (media coverage [1](#), [2](#), [3](#)).
- Google Camera research and improvements. I was the technical leader to launch and include [RAISR](#) on the Google [Pixel 2](#) to enhanced zoomed pictures.

Research Assistant

Aug 2010-Nov 2015

Purdue University, West Lafayette (USA)

- **Urban Modeling:** Procedural methods for fast design and edition of 3D urban models:
 - In collaboration with *Prof. Paul Waddell* (U.C. Berkeley), we developed a framework to interactively edit urban models with intuitive high-level controls.
 - In collaboration with *Prof. Ukkusuri* (Civil Engineering at Purdue), we developed a fast traffic micro-simulation that allows us to design the traffic of a city.
 - In collaboration with *Prof. Niyogi* (EAPS at Purdue), we are developing a GPU weather forecast system to be integrated with the city and traffic design framework.
- **3D Urban Reconstruction and Urban Vision.** 2012.

Summer Research Appointment

June-Aug 2014

U.C. Berkeley, Berkeley (USA)

Research in traffic assignment simulator with GPUs.

Summer Research Intern

May-Aug 2013

NVidia, Santa Clara (USA)

Research in procedural modeling and new software architecture for future GPUs.

Research Assistant

Jan-June 2010

McGill University, Montreal (Canada)

Developed an auto-calibration and auto-brightness multi-projector system.

Mobile Software Engineer

Nov-Dec 2009

Mobile Snacks Inc., Madrid (Spain)

Developed a Mobile banking application for Android and WebOS.

Software Engineer

July 2008-October 2009

European Space Agency (ESA), ESTEC Noordwijk (Netherlands)

Developed the software to control pico-satellites from an Android device.

Teaching Instructor

UML course for Senior Technicians, Madrid (Spain)

May-June 2008

Conferences

- **Paper Reviewer:** SIGGRAPH, SIGGRAPH Asia, Computer Graphics Forum, Eurographics, Computer & Graphics Journal, SIMPAT, CGI, ZUSC, CVIU, and Optical Networks and Systems Symposium.
- **Presentations at Conferences:**
 - **SIGGRAPH 2017** – Los Angeles, USA, 30 Jul-3 August.
 - **SIGGRAPH 2015** – Los Angeles, USA, 9-13 August.
 - **Eurographics 2014** – Strasbourg, France, 7-11 April.
 - **Eurographics 2013** – Girona, Spain, 6-10 May.
 - **SIGGRAPH ASIA 2012** – Singapore, Singapore, 28 Nov-1 Dec.
 - **CVPR 2011** – Colorado Springs, USA, 20-25 June.
- **Additional Conferences Attended:** ICIIP 2016, Phoenix, USA, 25-28 Sept.; SIGGRAPH 2012, Los Angeles, USA, 5-9 August; SIGGRAPH 201, Vancouver, Canada, 7-11 August.

Computer Skills

- **Software Designer:** C++, C, Java, Boost, Qt, C#, WPF, WCF, Halide, Python, PHP, XML, XSLT, Motorola ColdFire, Matlab, Perl, Ada95, OpenGL, GLSL, CUDA, OpenCV, PCL, and ARToolKit.
- **Software Engineer:** Enterprise Architect, Rational Rose, and UML.
- **Database:** MySQL, PostgreSQL, Oracle, and Microsoft SQL Server.
- **Video and Image Editing:** Adobe Premiere, Adobe Photoshop, and Gimp.

Languages

- **English and Spanish:** Fluent.
- **Swedish:** Good at reading and writing (6 courses in Sweden).

Additional Info

- Board member of the Fulbright Association at Purdue (2011).
- Member: ACM and European Association for Computer Graphics (EG).
- **Scout** (Scout Movement): "Scouter" (a volunteer who works with kids) for three years and member for eight years (1995-2006). Received the Spanish official "Outdoor Activities Instructor" diploma.

Graphically

