

# JORGE JIMENEZ

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## BACKGROUND

Jorge Jimenez is a passionate real-time graphics researcher born in Spain in the early '82. He received his PhD degree in real-time graphics from Universidad de Zaragoza in 2012, and as of today, he works in Activision Blizzard as Graphics R&D Technical Director. His passion for graphics started after watching old school demos in his brother's Amiga A1000. His interests include real-time photorealistic rendering, special effects, squeezing rendering algorithms to be practical in game environments, trying to break the limits of current GPU hardware. He has various contributions in conferences, books, and journals, including SIGGRAPH and GDC, the GPU Pro series, the Game Developer magazine, and the journal Transaction on Graphics. He has also developed artistic abilities and judgment, which in conjunction with its positive and energetic attitude help him to further pursue photorealism.

## EDUCATION

- ★ **Universidad de Zaragoza, Spain**  
PhD in Computer Science, Real-Time Graphics, *July 2012*

## EXPERIENCE

- ★ **Activision Blizzard**  
Graphics R&D Technical Director, *March 2012 – Today*

## SELECTED PUBLICATIONS

- ★ **SMAA: Enhanced Subpixel Morphological Antialiasing** [URL](#)  
J. Jimenez, Jose I. Echevarria, T. Sousa, D. Gutierrez  
*Computer Graphics Forum (EUROGRAPHICS 2012)*
- ★ **A Practical Appearance Model for Dynamic Facial Color** [URL](#)  
J. Jimenez, T. Scully, N. Barbosa, C. Donner, X. Alvarez, T. Vieira, P. Matts, V. Orvalho, D. Gutierrez, T. Weyrich  
*ACM Transactions on Graphics (SIGGRAPH Asia 2010)*
- ★ **Non-photorealistic, depth-based image editing** [URL](#)  
J. Lopez-Moreno, J. Jimenez, S. Hadap, E. Reinhard, K. Anjyo, D. Gutierrez  
*Computers & Graphics, 2011*
- ★ **Real Time Realistic Skin Translucency** [URL](#)  
J. Jimenez, D. Whelan, V. Sundstedt, D. Gutierrez  
*IEEE Computer Graphics & Applications, 2010*
- ★ **Stylized Depiction of Images Based on Depth Perception** [URL](#)  
J. Lopez-Moreno, J. Jimenez, S. Hadap, E. Reinhard, K. Anjyo, D. Gutierrez  
*NPAR: Non-Photorealistic Animation and Rendering, 2010 (Best Paper Award)*
- ★ **Screen-space perceptual rendering of human skin** [URL](#)  
J. Jimenez, V. Sundstedt, D. Gutierrez  
*ACM Transactions on Applied Perception, 2009*
- ★ **Gaze-based Interaction in Virtual Environments**  
J. Jimenez, D. Gutierrez, P. Latorre  
*The Journal of Universal Computer Science, 2008*
- ★ **Faster human skin**  
J. Jimenez, D. Gutierrez  
*CEIG 2008*

COURSES	★ Next Generation Post Processing in Call of Duty: Advanced Warfare (Advances in Real-Time Rendering in Games)	URL
	N. Tatarchuk, J. Jimenez, B. Karis, N. Schulz, T. Made, M. Drobot, B. Wronski, A. Bezzati, P. Sikachev, N. Longchamps, W. Brainerd and M. Valient <i>SIGGRAPH 2014 Course</i>	
	★ Separable Subsurface Scattering & Photorealistic Eyes Rendering (Advances in Real-Time Rendering in Games)	URL
	N. Tatarchuk, P. Hennessy, H. Malan, J. Jimenez, L. Yang, M. Acton, M. Mittring, S. Hill, D. Baker, J. Edwards and E. Persson <i>SIGGRAPH 2012 Course</i>	
	★ Jimenez's MLAA & SMAA (Filtering Approaches for Real-Time Anti-Aliasing)	URL
	J. Jimenez, D. Gutierrez, J. Yang, A. Reshetov, P. Demoreuille, T. Berghoff, C. Perthuis, H. Yu, M. McGuire, T. Lottes, H. Malan, E. Persson, D. Andreev and T. Sousa <i>SIGGRAPH 2011 Course</i>	
CHAPTERS	★ Practical Morphological Anti-Aliasing	URL
	J. Jimenez, B. Masia, J. I. Echevarria, F. Navarro and D. Gutierrez <i>GPU Pro 2, 2011</i>	
	★ Real-Time Facial Wrinkles Animation	URL
	J. Jimenez, J. I. Echevarria, C. Oat and D. Gutierrez <i>GPU Pro 2, 2011</i>	
	★ Screen-Space Subsurface Scattering	URL
	J. Jimenez, D. Gutierrez <i>GPU Pro, 2010</i>	
PROJECT PARTICIPATION	★ GOLEM: Realistic Virtual Humans <i>June 2010 – May 2014</i>	
	★ MIMESIS: Low-cost techniques for material appearance model acquisition <i>December 2010 – November 2013</i>	
	★ TANGIBLE: Realistic humans and natural tangible interaction (TIN2007-63025) <i>December 2007 – November 2010</i>	
	★ Computational Photography: New algorithms for high dynamic range image processing (UZ2007-TEC06) <i>January 2008 – January 2009</i>	
GRANTS	★ Diputación General de Aragón (Local Government) Real-time strategies in computer graphics <i>October 2009 – January 2012</i>	
	★ Instituto de Investigación en Ingeniería de Aragón Photorealistic simulation of skin <i>April 2008 – April 2009</i>	
	★ Institute for Biocomputation and Physics of Complex Systems Sound synthesis for a particle accelerator and real-time audio composition based on log	

events, both part of the ZIVIS project

*April 2007 – July 2007*

- INTERNSHIPS**
- ★ **University College London, Department of Computer Science**  
Skin rendering technology research (supervisors: T. Weyrich and D. Gutierrez)  
*November 2011*
- TALKS**
- ★ **GDC 2013 and GDC China 2013:** Next Generation Character Rendering
  - ★ **Eurographics 2012:** SMAA: Enhanced Subpixel Morphological Antialiasing. Cagliari (Italy).
  - ★ **FMX 2012:** Real-Time Realistic Skin Rendering. Stuttgart (Germany).
  - ★ **SIGGRAPH 2011:** Jimenez's MLAA & SMAA. Vancouver (Canada).
  - ★ **SIGGRAPH Asia 2010:** A Practical Appearance Model for Dynamic Facial Color. Seoul (South Korea).
  - ★ **APGV 2009:** Screen-space perceptual rendering of human skin. Chania (Greece).
  - ★ **Interacción 2008:** Interacción basada en la mirada en entornos 3D. Albacete (Spain).
  - ★ **CEIG 2008:** Faster Human Skin. Barcelona (Spain).
- MAIN SKILLS**
- ★ **Very strong communication skills**
  - ★ **Very fluent programming skills in numerous languages:** including C++ and STL, HLSL, GLSL, X86 and ARM Assembly, Python, Matlab, Java, PHP, Javascript
  - ★ **Very solid 3D graphics theory knowledge**
  - ★ **Very strong knowledge of processor architectures**
  - ★ **Very strong eye for photorealism**
  - ★ **FX:** very strong knowledge of a wide range of shader effects
  - ★ **SDKs:** in-depth knowledge of both DirectX and OpenGL
  - ★ **Modeling:** strong subdivision modeling skills. Basic anatomy knowledge
  - ★ **Image Editing:** strong Photoshop editing skills
  - ★ **3D Authoring:** basic skills with Cinema 4D, Maya, 3ds MAX and After Effects
- ADDITIONAL SKILLS**
- ★ **Audio:** OpenAL and basic audio synthesis knowledge
  - ★ **Networks:** low level knowledge of HTTP, FTP, SMTP, POP3, IMAP and proxy services.
  - ★ **Operating Systems:** low level Linux kernel development knowledge, tweaked various drivers
  - ★ **Web Design:** MySQL, W3 HTML, CSS and DOM
- REFERENCES**
- Available upon request