

Pascal Guehl

PhD student in Computer Graphics (experienced Engineer)

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[LinkedIn](#) [Portfolio](#)
[ResearchGate](#) [Vimeo](#) [GitHub](#)

Education

2016-2021 [University of Strasbourg](#)

PhD student in Computer Graphics (*MERIT-BASED SCHOLARSHIP*) [**in progress**]

research: real-time / interactive texture and material synthesis [*R&D: content creation for films / video games*]

2015-2016 [University Claude Bernard Lyon 1](#)

MRes. Master of Research in Computer Graphics (*1ST RANK, VALEDICTORIAN*)

internship: AMD (Advanced Micro Devices) (**6 months**) [*R&D: real-time denoising of photorealistic rendering*]

2004-2005 [Arts & Métiers ParisTech](#) (ENSAM)

Advanced Master in Computer Graphics (*TD: Technical Director*) [*Mastère Spécialisé*]

internship: Thales Training & Simulation (**7 months**) [*Technical Director: real-time VFX, Maya*]

2000-2003 [ESIEA](#) (Graduate School in Informatics, Electronics and Control/Automation)

MSc. Master of Science in Computer Science (*GRADUATED WITH HIGHEST HONORS*)

internship: Thales Training & Simulation (**12 months**) [*Defense industry: virtual cockpits*]

internship: Telecom ParisTech research lab (**3 months**) [*R&D: image processing*]

1996-2000 [University of Cergy-Pontoise](#)

MSc. Master of Science in Physics and Applications [*Maîtrise – 1 year*]

internship: ENSEA research lab (**3 months**) [*R&D: image processing, IA*]

BSc. Bachelor of Science in Physics [*Licence – 1 year*]

internship: SKF Equipements (**2 months**) [*R&D: mechanical simulations*]

AS. Associate's Degree in Mathematics & Informatics [*Deug – 2 years*]

CUPGE classes [triple degree: Mathematics & Informatics, Physics, Chemistry] (*MERIT-BASED PREPARATORY CLASSES*)

Work Experience [more than 10 years]

2016-2021 [ICube](#) research lab ([IGG](#) team) and [University of Strasbourg](#)

PhD student in Computer Graphics [**3 years 7 months**] [**in progress**]

work: texture and material synthesis, procedural generation, GPU computing, real-time, creative AI

techno: C++, OpenGL, glm, GPU Computing, CMake, Visual Studio, git, Qt, ImGui, Python, Windows, Linux, Gimp, FLANN, Matlab

publications: [Semi-Procedural Textures using Point Process Texture Basis Functions](#)

- journal: [CGF](#) (Computer Graphics Forum), July 2020

- conference: [EGSR](#) (Eurographics Symposium on Rendering), July 2020, **award:** *Honorable Mention from the best papers committee*

- conference: [Procedural Modeling](#), IG-RV Research Group, April 2019, Lyon, France

- associated research project: [HDWorlds](#) (Huge Digital Worlds) [French ANR project]

teaching: BSc. (Bachelor) and MSc. (Master) in Informatics [C++, Python, OpenGL, IA]

2016 [AMD](#) (Advanced Micro Devices) and its French start-up [Exalt3D](#)

collaboration: [LIRIS](#) research lab ([Origami](#) team)

R&D intern in Computer Graphics [**6 months**]

work: real-time denoising of photorealistic rendering (progressive stochastic Monte Carlo rendering, image processing)

techno: C++, OpenCL, FireRays, OpenGL, GPU Computing, CMake, git, Qt, Windows, CUDA, shadertoy

2011-2015 **INRIA** research lab (**Maverick** team) (National Institute for computer science and applied mathematics)
R&D Engineer in Computer Graphics – Lead Developer [3 years 7 months]

work: **GigaVoxels** / **GigaSpace** SDK, sparse voxel octree, massive data visualization and generation, real-time rendering, ray-casting, streaming, procedural generation, GPU Computing

techno: C++, OpenGL, glm, GPU Computing, CUDA, NSight, CMake, svn, Qt, Windows, Linux

publications:

- conference: **GTC NVidia** (GPU Technology Conference), March 2013, San Jose, California, USA

- conference: **j.FIG** (Journées Françaises d'Informatique Graphique), November 2012, Calais, France

- ANR project: **RTIGE** (Real-Time & Interactive Galaxy for Edutainment) with **RSA Cosmos** company and **Observatoire de Paris (GEPI)**.

2006-2011 **CS Group** (Communication et Systemes) and its subsidiary **Diginext**

IT services company: Visual Simulation & Virtual Reality department

Software Engineer in Computer Graphics – Project Technical Manager [5 years 9 months]

work: 3D real-time virtual globe (GIS: geographic information system), scientific visualization, virtual cockpits, real-time rendering...

clients: **Airbus**, **CNES** (National Centre for Space Studies), **Cité de l'Espace**, **IRSN** (Radioprotection and

Nuclear Safety Institute), **IRIT** research lab, HPC team (**CS Group**), **Groupe Renault** (Technocenter), ...

techno: C++, C, OpenGL, OpenSceneGraph, CMake, Visual Studio, svn, Qt, QtCreator, QML, Python, Windows, Linux, VTK, Paraview, tcl/tk, XML/XSL, GDAL, GEOS, Agile software development (Scrum)

Thales Group - subsidiary **Thales Training & Simulation** (Defense industry: full flight simulators manufacturer)

2005 **R&D Technical Director intern in Computer Graphics** [7 months]

work: particle systems, real-time VFX, GPU computing, Maya

techno: C++ (polymorphism, template, design pattern), OpenGL, Cg, GLSL, GPU Computing, Maya (particle systems), Maya C++ plugin, svn, Windows, Visual Studio

2003-2004 **Software intern in Computer Graphics** [12 months] then **Software Engineer** [1 month]

work: virtual cockpit of Tiger helicopter's flight simulator (international Franco-German-Australian program)

collaborations: **Airbus Helicopters** and **Rheinmetall Defence Electronics GmbH** (Germany)

techno: C++, C, C#, OpenGL, GLStudio, Photoshop, svn, Visual Studio, MFC, Windows Forms, Windows

2001 **Télécom ParisTech** (graduate school) research lab (**Multimedia** group, **Video** team) [3 months]

R&D intern in Image Processing - work: adaptative wavelet compression (C, C++, Matlab, Linux)

2000 **ENSEA** (graduate school) research lab (**ETIS** lab, **Neurocybernetic** team) [3 months]

R&D intern in Image Processing - work: object recognition (AI, neural networks) (C, C++, Matlab, Linux)

1999 **SKF Equipements** (R&D office)

R&D intern in Applied Physics [2 months] - work: mechanical simulations (C, C++, Matlab, Windows)

Other Information

Human Skills: adaptability, love to learn, hard-working, problem solver, open minded, team spirit, self-motivated, pro-active, reliable, passionate, curious

Technical Skills: computer science, computer graphics, software engineering, object-oriented programming, 3D programming, GPU Computing, GUI, profiling, debugging, optimization, software configuration management, bug tracking, R&D, tools...

Artistic Skills: guitarist (> 30 years), computer music, composer (songwriter), beginner: bass, piano, drum

2020-2021 Electronic Music Producer (90h: Ableton), 2004-2007 Bachelor of Music (Musicology) (audited courses)

Student volunteer (conferences)

2020 **PIDS** (Paris Images Digital Summit) - **VFX industry** - 29 to 31 January 2020, Enghien, France

2019 **EGSR** (Eurographics Symposium on **Rendering**) - 8 to 12 July 2019, Strasbourg, France