

Vincent Pegoraro | Curriculum Vitae

PERSONAL & CONTACT INFORMATION

Family name: Pegoraro
Given name: Vincent
Year of birth: 1980
Place of birth: Clermont-Ferrand, France
Citizenship: French

Mailing address: Universität des Saarlandes
Fachbereich 6.2 – Informatik
Lehrstuhl für Computergraphik
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EDUCATION

2004–2009 University of Utah, Salt Lake City, UT, U.S.A.
Doctor of Philosophy in Computer Science
Ph.D. Degree with focus on Computer Graphics (Cumulative GPA: 3.986 / 4.000)

2000–2003 Polytech Lille – Université des Sciences et Technologies de Lille I, Lille, France
Diplôme d'Ingénieur in Computer Science – Electronics – Control
Master's Degree in Engineering with Computer Science Major (Ranking: top 3%)

1998–2000 Université Blaise Pascal de Clermont-Ferrand II, Clermont-Ferrand, France
Diplôme d'Etudes Universitaires Générales in Sciences of Matter
Bachelor's Program in Mathematics – Physics – Chemistry with Physics Major

1995–1998 Lycée René Descartes, Clermont-Ferrand, France
Diplôme du Baccalauréat Général – Série Scientifique
High School Degree in Sciences with Mathematics Major

1991–1995 Collège Le Stade, Clermont-Ferrand, France
Diplôme National du Brevet
Middle School Degree

HONORS & AWARDS

- Best Paper Award, 3rd IEEE Pacific Visualization Symposium, 2010
- Teaching Fellowship supplementary to Teaching Assistantship, University of Utah, 2004
- Edward M. Kennedy Award for Health Care Innovation, CIMIT Simulation Group, 2003

COVER IMAGES

- Proceedings of the 37th Graphics Interface Conference, 2011
- Proceedings of the 21th Eurographics Symposium on Rendering, CGF 29(4), 2010
- Proceedings of the 2nd Eurographics Workshop on Natural Phenomena, 2006

PROFESSIONAL EXPERIENCE

- 11/02/09 – Present Saarland University, Saarbrücken, Germany
Post-Doctoral Researcher in the Computer Graphics Laboratory (CGUdS)
⇒ *Light transport simulation for rendering and visualization in the framework of the Multimodal Computing and Interaction (M2CI) Cluster of Excellence*
- 05/15/05 – 11/01/09 University of Utah, Salt Lake City, UT, U.S.A.
(4 years)
Research Assistant at the Scientific Computing and Imaging (SCI) Institute
⇒ *Physically-based simulation of light transport in participating media in the framework of the Center for the Simulation of Accidental Fires and Explosions*
- 05/07/07 – 08/19/07 Lucasfilm Ltd. – Industrial Light & Magic (ILM), San Francisco, CA, U.S.A.
(3½ months)
Research & Development Intern
⇒ *Development of an interactive GPU-based tool for volumetric scattering preview and production-oriented RenderMan components for volume rendering*
- 05/19/03 – 05/18/04 Center for Integration of Medicine & Innovative Technology, Boston, MA, U.S.A.
(1 year)
Research Engineer in the Simulation Group
⇒ *Realistic synthesis of X-ray, fluoroscopic & digital subtraction angiography images in real-time on commodity graphics hardware and development of other components (collision detection, skeletonization, augmented reality) of a simulation system for interventional radiology procedures training*
- 03/17/03 – 05/04/03 INRIA – Laboratoire d'Informatique Fondamentale de Lille, Lille, France
(1½ months)
Intern in the Graphics Research Group
⇒ *Implementation of stereoscopy based on both quad-buffering and anaglyphs in a laparoscopic medical simulator*
- 06/24/02 – 09/08/02 University of Hertfordshire, Hatfield, England, United Kingdom
(2½ months)
Intern in the Neural Computation Research Group
⇒ *Development of a visualization tool to help better understand the structural evolution of neural networks and their associated parameters*
- 06/18/01 – 07/29/01 Trelleborg, Clermont-Ferrand, France
(6 weeks)
Intern in the Control Research Consultancy
⇒ *Development of a set of tools to manage data transfer from the internal network to an automaton and update the data in response to both sensors and inputs from the designed graphical user interface*

TEACHING EXPERIENCE

- Sum. 10 & Sum. 11 Saarland University, Saarbrücken, Germany
(2 semesters)
Co-Instructor of the Course on Realistic Image Synthesis
⇒ *Lecturing, examining*
- Winter 2010/2011 Saarland University, Saarbrücken, Germany
(1 semester)
Co-Instructor of the Course on Computer Graphics
⇒ *Lecturing, revising course content, examining*
- Fall 04 & Spring 05 University of Utah, Salt Lake City, UT, U.S.A.
(2 semesters)
Teaching Assistant at the School of Computing for the CS Introductory Course
⇒ *Leading Java-based laboratory sessions, grading, holding office hours*

RESEARCH INTERESTS & PUBLISHED WORK

Physically-Based Light Transport, Predictive Rendering, Efficient Global Illumination, Ray-Tracing, Photorealistic Image Synthesis, Computer Graphics, Scientific Visualization, Dynamics Simulation

Theses & Patents:

- Efficient Physically-Based Simulation of Light Transport in Participating Media
Vincent Pegoraro
Ph.D. Thesis, School of Computing, University of Utah, 2009
- Methods and Apparatus for Simulation of Endovascular and Endoluminal Procedures
S. Cotin, X. Wu, P. Neumann, C. Duriez, J. Lenoir, R. Bardsley, V. Pegoraro, S. Dawson
Patent WO/2006/020792, Massachusetts General Hospital, 2006

Peer-Reviewed Conference Publications & Scientific Journal Articles:

- An Open Modular Architecture for Effective Integration of Virtual Worlds in the Web
Sergiy Byelozorov, Vincent Pegoraro, Philipp Slusallek
Proceedings of the 10th IEEE International Conference on Cyberworlds, (to appear), 2011
- Depth of Field Effects for Interactive Direct Volume Rendering
Mathias Schott, Pascal Grosset, Tobias O. Martin, Vincent Pegoraro, Sean T. Smith, Charles D. Hansen
Proceedings of the 13th Eurographics Symposium on Visualization, CGF 30(3), 941-950, 2011
- A Mathematical Framework for Efficient Closed-Form Single Scattering
Vincent Pegoraro, Mathias Schott, Philipp Slusallek
Proceedings of the 37th Graphics Interface Conference, 151-158, 2011
- Physically-Based Interactive Flow Vis based on Schlieren and Interferometry Experimental Techniques
Carson Brownlee, Vincent Pegoraro, Siddharth Shankar, Patrick S. McCormick, Charles D. Hansen
IEEE Transactions on Visualization and Computer Graphics, (to appear), 2010
- A Closed-Form Solution to Single Scattering for General Phase Functions and Light Distributions
Vincent Pegoraro, Mathias Schott, Steven G. Parker
Proceedings of the 21th Eurographics Symposium on Rendering, CGF 29(4), 1365-1374, 2010
- Physically-Based Interactive Schlieren Flow Visualization
Carson Brownlee, Vincent Pegoraro, Siddharth Shankar, Patrick S. McCormick, Charles D. Hansen
Proceedings of the 3rd IEEE Pacific Visualization Symposium, 145-152, 2010
- A Directional Occlusion Shading Model for Interactive Direct Volume Rendering
Mathias Schott, Vincent Pegoraro, Charles D. Hansen, Kévin Boulanger, Kadi Bouatouch
Proceedings of the 11th Eurographics Symposium on Visualization, CGF 28(3), 855-862, 2009
- An Analytical Approach to Single Scattering for Anisotropic Media and Light Distributions
Vincent Pegoraro, Mathias Schott, Steven G. Parker
Proceedings of the 35th Graphics Interface Conference, 71-77, 2009
- An Analytical Solution to Single Scattering in Homogeneous Participating Media
Vincent Pegoraro, Steven G. Parker
Proceedings of the 30th Eurographics Conference, CGF 28(2), 329-335, 2009
- Towards Interactive Global Illumination Effects via Sequential Monte Carlo Adaptation
Vincent Pegoraro, Carson Brownlee, Peter S. Shirley, Steven G. Parker
Proceedings of the 3rd IEEE Symposium on Interactive Ray Tracing, 107-114, 2008

- Sequential Monte Carlo Adaptation in Low-Anisotropy Participating Media
Vincent Pegoraro, Ingo Wald, Steven G. Parker
Proceedings of the 19th Eurographics Symposium on Rendering, CGF 27(4), 1097-1104, 2008
- Physically-Based Realistic Fire Rendering
Vincent Pegoraro, Steven G. Parker
Proceedings of the 2nd Eurographics Workshop on Natural Phenomena, 51-59, 2006
- New Approaches to Computer-Based Interventional Neuroradiology Training
X. Wu, V. Pegoraro, V. Luboz, P. F. Neumann, R. S. Bardsley, S. M. Dawson, S. M. Cotin
Proceedings of the 13th Medicine Meets Virtual Reality Conference, 111, 602-607, 2005

Posters & Presentations:

- Reduced Dual-Formulation for Analytical Anisotropic Single Scattering
Vincent Pegoraro, Mathias Schott, Steven G. Parker
Poster Session of the 1st High-Performance Graphics Conference, 2009
- High Fidelity Simulation of Interventional Neuroradiology Procedures
S. Cotin, V. Luboz, J. Lenoir, C. Duriez, X. Wu, P. Neumann, V. Pegoraro, J. Rabinov, S. Dawson
Exhibit Presentation at the 43rd ASNR Neurographics Meeting, 2005

PROFESSIONAL ACTIVITIES

International Program Committee Member:

- IASTED International Conference on Graphics and Virtual Reality, 2011

Scientific Journal Reviewer:

- Computers & Graphics, 2010
- IEEE Transactions on Visualization and Computer Graphics, 2010

Refereed Conference Reviewer:

- Pacific Conference on Computer Graphics and Applications, 2011
- Eurographics, 2011
- ACM SIGGRAPH Asia, 2009
- Eurographics Symposium on Parallel Graphics and Visualization, 2009
- IEEE International Parallel & Distributed Processing Symposium, 2008
- Eurographics State of the Art Reports, 2006

Student Volunteer:

- IEEE Symposium on Interactive Ray Tracing, 2006

FOREIGN LANGUAGES

French: native

English: fluent 2003 – GRE General Test : Quantitative 790/800, Analytical Writing 4/6
 2003 – TOEFL Computer-Based : 257/300
 2002 – TOEFL Institutional Test : 560/650
 2001 – First Certificate

Spanish: intermediate 2002 – Certificado Inicial

German: novice

OTHER ACTIVITIES & INTERESTS

Artistic : playing the guitar (3 years in a band & concerts), learning the violin, amateur photography

Media : movies, animated films, cartoons, video games, books, and anything imagination-friendly

Travel : France, Spain, United Kingdom, The Netherlands, Belgium, Luxemburg, Germany, Switzerland, Austria, Czech Republic, Poland, Hungary, Bosnia and Herzegovina, Turkey, Canada, U.S.A.

Sport : workout, mountain-biking, rock-climbing, scenic hikes

REFERENCES

- Dr. Philipp Slusallek Saarland University & DFKI
- Dr. Steven G. Parker University of Utah & NVIDIA Research
- Dr. Charles D. Hansen University of Utah & SCI Institute
- Dr. Peter S. Shirley University of Utah & NVIDIA Research
- Dr. Ingo Wald University of Utah & Intel Research
- Dr. Simon Premože Lucasfilm Ltd. – Industrial Light and Magic

Contact information available upon request