

# **Journal of WSCG**

An international journal of algorithms, data structures and techniques for computer graphics and visualization, surface meshing and modeling, global illumination, computer vision, image processing and pattern recognition, computational geometry, visual human interaction and virtual reality, animation, multimedia systems and applications in parallel, distributed and mobile environment.

***EDITOR – IN – CHIEF***

***Václav Skala***

## **Journal of WSCG**

Editor-in-Chief: Vaclav Skala  
c/o University of West Bohemia, Univerzitni 8, Box 314  
306 14 Plzen  
Czech Republic  
skala@kiv.zcu.cz

Managing Editor: Vaclav Skala

Author Service Department & Distribution:  
Vaclav Skala UNION Agency  
Na Mazinach 9  
322 00 Plzen  
Czech Republic

Hardcopy: **ISSN 1213 – 6972**  
CD ROM: **ISSN 1213 – 6980**  
On-line: **ISSN 1213 – 6964**

# Journal of WSCG 2009

## Editorial Advisory Board

Adzhiev, V. (United Kingdom)	Magnor, M. (Germany)
Baranoski, G. (Canada)	Mollá Vayá, R. (Spain)
Bekaert, P. (Belgium)	Muller, H. (Germany)
Benes, B. (United States)	Murtagh, F. (Ireland)
Bilbao, J. (Spain)	Myszkowski, K. (Germany)
Biri, V. (France)	Pasko, A. (United Kingdom)
Bittner, J. (Czech Republic)	Pedrini, H. (Brazil)
Bouatouch, K. (France)	Peroche, B. (France)
Brodlie, K. (United Kingdom)	Platis, N. (Greece)
Buehler, K. (Austria)	Puppo, E. (Italy)
Chen, M. (United Kingdom)	Purgathofer, W. (Austria)
Chover, M. (Spain)	Rojas-Sola, J. (Spain)
Coquillart, S. (France)	Rokita, P. (Poland)
Crosnier, A. (France)	Rosenhahn, B. (Germany)
Csebfalvi, B. (Hungary)	Rossignac, J. (United States)
Cunningham, S. (United States)	Rudomin, I. (Mexico)
Daniel, M. (France)	Sakas, G. (Germany)
de Geus, K. (Brazil)	Schumann, H. (Germany)
Debelov, V. (Russia)	Segura, R. (Spain)
Feito, F. (Spain)	Selim, B. (Turkey)
Ferguson, S. (United Kingdom)	Skala, V. (Czech Republic)
Flaquer, J. (Spain)	Slavik, P. (Czech Republic)
Flusser, J. (Czech Republic)	Slusallek, P. (Germany)
Gallo, G. (Italy)	Sramek, M. (Austria)
Groeller, E. (Austria)	Stroud, I. (Switzerland)
Gudukbay, U. (Turkey)	Teschner, M. (Germany)
Gutierrez, D. (Spain)	Theoharis, T. (Greece)
Havran, V. (Czech Republic)	Triantafyllidis, G. (Greece)
Jansen, F. (Netherlands)	Vergeest, J. (Netherlands)
Kavan, L. (Ireland)	Wu, E. (China)
Klein, R. (Germany)	Wuethrich, C. (Germany)
Klosowski, J. (United States)	Zara, J. (Czech Republic)
Lee, T. (Taiwan)	Zemcik, P. (Czech Republic)



# WSCG 2009

## Board of Reviewers

Abas,M. (Malaysia)  
Adzhiev,V. (United Kingdom)  
Akleman,E. (United States)  
Andreadis,I. (Greece)  
Aspragathos,N. (Greece)  
Aveneau,L. (France)  
Baranoski,G. (Canada)  
Battiato,S. (Italy)  
Bekaert,P. (Belgium)  
Bellon,O. (Brazil)  
Benes,B. (United States)  
Bilbao,J. (Spain)  
Biri,V. (France)  
Bittner,J. (Czech Republic)  
Borchani,M. (France)  
Bouatouch,K. (France)  
Bouville,C. (France)  
Brodlie,K. (United Kingdom)  
Bruckner,S. (Austria)  
Bruni,V. (Italy)  
Brunnet,G. (Germany)  
Buehler,K. (Austria)  
CarmenJuan-Lizandra,M. (Spain)  
Chaudhuri,D. (India)  
Chen,M. (United Kingdom)  
Chover,M. (Spain)  
Chum,O. (Czech Republic)  
Coquillart,S. (France)  
Crosnier,A. (France)  
Csebfalvi,B. (Hungary)  
Cunningham,S. (United States)  
Daniel,M. (France)  
de Geus,K. (Brazil)  
Debelov,V. (Russia)  
Dingliana,J. (Ireland)  
Drbohlav,O. (Czech Republic)  
Duce,D. (United Kingdom)  
Durikovic,R. (Slovakia)  
Egges,A. (Netherlands)  
Eisemann,M. (Germany)  
Erbacher,R. (United States)  
Feito,F. (Spain)  
Ferguson,S. (United Kingdom)  
Ferko,A. (Slovakia)  
Fernandes,A. (Portugal)  
Flaquer,J. (Spain)  
Flusser,J. (Czech Republic)  
Foufou,S. (France)  
Gallo,G. (Italy)  
Galo,M. (Brazil)  
Ganovelli,F. (Italy)  
Garcia-Alonso,A. (Spain)  
Giannini,F. (Italy)  
Gonzalez,P. (Spain)  
Grammalidis,N. (Greece)  
Groeller,E. (Austria)  
Gudukbay,U. (Turkey)  
Gumbau,J. (Spain)  
Gupta,A. (United States)  
Gutierrez,D. (Spain)  
Hanak,I. (Czech Republic)  
Haro,A. (United States)  
Hasler,N. (Germany)  
Havran,V. (Czech Republic)  
Hernández,B. (Mexico)  
Herout,A. (Czech Republic)  
Horain,P. (France)  
House,D. (United States)  
Iwanowski,M. (Poland)  
Janda,M. (Czech Republic)  
Jansen,F. (Netherlands)  
Joan-Arinyo,R. (Spain)  
Jones,M. (United Kingdom)  
Karabassi,E. (Greece)  
Kavan,L. (Ireland)  
Kimmel,B. (Canada)  
Klein,R. (Germany)  
Klosowski,J. (United States)

Knight,M. (United Kingdom)  
Kohout,J. (Czech Republic)  
Kolcun,A. (Czech Republic)  
Krishnaswamy,A. (United States)  
Lanquetin,S. (France)  
Lee,T. (Taiwan)  
Lewis,J. (New Zealand)  
Lin,W. (Taiwan)  
Liu,D. (Taiwan)  
Maciel,A. (Brazil)  
Magnor,M. (Germany)  
Maierhofer,S. (Austria)  
Mandl,T. (Germany)  
Matey,L. (Spain)  
Matkovic,K. (Austria)  
Mattausch,O. (Austria)  
Michoud,B. (France)  
Mokhtari,M. (Canada)  
Mollá Vayá,R. (Spain)  
Montrucchio,B. (Italy)  
Mudur,S. (Canada)  
Muller,H. (Germany)  
Murtagh,F. (Ireland)  
Myszkowski,K. (Germany)  
OliveiraJunior,P. (Brazil)  
Papaioannou,G. (Greece)  
Pasko,A. (United Kingdom)  
Pasko,G. (Cyprus)  
Paulin,M. (France)  
Pedrini,H. (Brazil)  
Peroche,B. (France)  
Pettifer,S. (United Kingdom)  
Platis,N. (Greece)  
Přikryl,J. (Czech Republic)  
Puig,A. (Spain)  
Puppo,E. (Italy)  
Purgathofer,W. (Austria)  
Renaud,C. (France)  
Ripolles,O. (Spain)  
Ritschel,T. (Germany)  
Rodeiro,J. (Spain)  
Rojas-Sola,J. (Spain)  
Rokita,P. (Poland)  
Rosenhahn,B. (Germany)  
Rossignac,J. (United States)  
Rudomin,I. (Mexico)  
Sakas,G. (Germany)  
Sanna,A. (Italy)  
Schumann,H. (Germany)  
Segura,R. (Spain)  
Selim,B. (Turkey)  
Sellent,A. (Germany)  
Sirakov,N. (United States)  
Skala,V. (Czech Republic)  
Slavik,P. (Czech Republic)  
Slusallek,P. (Germany)  
Solis,A. (Mexico)  
Sousa,A. (Portugal)  
Sramek,M. (Austria)  
Stroud,I. (Switzerland)  
SuarezRivero,J. (Spain)  
Svoboda,T. (Czech Republic)  
Teschner,M. (Germany)  
Theoharis,T. (Greece)  
Theußl,T. (Austria)  
Torrens,F. (Spain)  
Triantafyllidis,G. (Greece)  
Tytkowski,K. (Poland)  
Vanecek,P. (Czech Republic)  
Vasa,L. (Czech Republic)  
Veiga,L. (Portugal)  
Vergeest,J. (Netherlands)  
Viola,I. (Norway)  
Vitulano,D. (Italy)  
Wan,T. (United Kingdom)  
Wu,E. (China)  
Wuethrich,C. (Germany)  
Yencharis,L. (United States)  
You,S. (United States)  
Zach,C. (United States)  
Zachmann,G. (Germany)  
Zalik,B. (Slovenia)  
Zara,J. (Czech Republic)  
Zemcik,P. (Czech Republic)  
Zhu,Y. (United States)

# Journal of WSCG

## Vol. 17, No.1-3

### Contents

Eissele,M., Sanftmann,H., Ertl, T.: Interactively Refining Object-Recognition System	1
Radziszewski,M., Boryczko,K., Alda,W.: An Improved Technique for Full Spectral Rendering	9
Malik,M.M., Heinzl,Ch., Gröller,M.E.: Computation and Visualization of Fabrication Artifacts	17
Taibo,J., Seoane,A., Hernández,A.: Dynamic Virtual Textures	25
Wenger,S., Fernandez,A., Morisset,J.C., Magnor,M.: Algebraic 3D Reconstruction of Planetary Nebulae	33
Hermann,M., Greß,A., Klein,R.: Interactive Exploration of Large Event Datasets in High Energy Physics	41
Csébfalvi,B., Domonkos,B.: Prefiltered Gradient Reconstruction for Volume Rendering	49
Latapie,S.: Hybrid sort-first/sort-last rendering for dense material particle systems	57
Orthmann,J., Salama,Ch.R., Kolb,A.: Responsive Grass	65
Parys,R., Knittel,G.: Giga-Voxel Rendering from Compressed Data on a Display Wall	73
Bauer,F., Stamminger,M., Meister,M.: Reconstructing Indoor Scenes with Omni-Cameras	81
Elmezain,M., Al-Hamadi,A., Michaelis,B.: A Novel System for Automatic Hand Gesture Spotting and Recognition in Stereo Color Image	89
Stanek,S.: Simple emphatic user interface	97

