

# Contents

## Part I Feature Extraction

<b>Discrete Distortion for 3D Data Analysis</b> .....	3
Leila De Florian, Federico Iuricich, Paola Magillo, Mohammed Mostefa Mesmoudi, and Kenneth Weiss	

<b>Interactive Visualization—A Key Prerequisite for Reconstruction and Analysis of Anatomically Realistic Neural Networks</b> .....	27
Vincent J. Dercksen, Marcel Oberlaender, Bert Sakmann, and Hans-Christian Hege	

<b>MRI-Based Visualisation and Quantification of Rheumatoid and Psoriatic Arthritis of the Knee</b> .....	45
Ben Donlon, Douglas Veale, Patrick Brennan, Robert Gibney, Hamish Carr, Louise Rainford, ChinTeck Ng, Eliza Pontifex, Jonathan McNulty, Oliver FitzGerald, and John Ryan	

<b>An Application for the Visualization and Quantification of HIV-Associated Lipodystrophy from Magnetic Resonance Imaging Datasets</b> .....	61
Tadhg O’Sullivan, Patrick Brennan, Peter Doran, Paddy Mallon, Stephen J. Eustace, Eoin Kavannagh, Allison Mcgee, Louise Rainford, and John Ryan	

## Part II Classification

<b>Semi-Automatic Rough Classification of Multichannel Medical Imaging Data</b> .....	71
Ahmed Elmoasry, Mohamed Sadek Maswadah, and Lars Linsen	

<b>An Evaluation of Peak Finding for DVR Classification of Biological Data</b> .....	91
Aaron Knoll, Rolf Westerteiger, and Hans Hagen	
<b>Part III Volumes and Shapes</b>	
<b>Vessel Visualization with Volume Rendering</b> .....	109
Christoph Kubisch, Sylvia Glaßer, Mathias Neugebauer, and Bernhard Preim	
<b>Efficient Selection of Representative Views and Navigation Paths for Volume Data Exploration</b> .....	135
Eva Monclús, Pere-Pau Vázquez, and Isabel Navazo	
<b>Feature Preserving Smoothing of Shapes Using Saliency Skeletons</b> .....	155
Alexandru Telea	
<b>Part IV Tensor Visualization</b>	
<b>Enhanced DTI Tracking with Adaptive Tensor Interpolation</b> .....	175
Alessandro Crippa, Andrei C. Jalba, and Jos B.T.M. Roerdink	
<b>Image-Space Tensor Field Visualization Using a LIC-like Method</b> .....	193
Sebastian Eichelbaum, Mario Hlawitschka, Bernd Hamann, and Gerik Scheuermann	
<b>Towards a High-quality Visualization of Higher-order Reynold's Glyphs for Diffusion Tensor Imaging</b> .....	211
Mario Hlawitschka, Younis Hijazi, Aaron Knoll, and Bernd Hamann	
<b>Part V Visualizing Genes, Proteins, and Molecules</b>	
<b>VENLO: Interactive Visual Exploration of Aligned Biological Networks and Their Evolution</b> .....	231
Steffen Brasch, Georg Fuellen, and Lars Linsen	
<b>Embedding Biomolecular Information in a Scene Graph System</b> .....	251
Andreas Halm, Eva Eggeling, and Dieter W. Fellner	
<b>Linking Advanced Visualization and MATLAB for the Analysis of 3D Gene Expression Data</b> .....	267
Oliver Rübél, Soile V.E. Keränen, Mark Biggin, David W. Knowles, Gunther H. Weber, Hans Hagen, Bernd Hamann, and E. Wes Bethel	
<b>Index</b> .....	287