

Technical Papers

Video

Session Chair: Sylvain Paris

- 360 Video Stabilization
- Temporally Coherent Completion of Dynamic Video
- Robust Background Identification for Dynamic Video Editing
- Jump: Virtual Reality Video

The Venetian Macao, Sicily 2501, Level 1

Tuesday, December 06, 2016

9:00 AM – 10:45 AM

Indoor Scene Modeling

Session Chair: Marie-Paule Cani

- Structure-oriented Networks of Shape Collections
- Dynamic Furniture Modeling Through Assembly Instructions
- Action-Driven 3D Indoor Scene Evolution
- Emptying, Refurnishing, and Relighting Indoor Spaces

The Venetian Macao, Sicily 2503, Level 1

Tuesday, December 06, 2016

9:00 AM – 10:45 AM

Computational Photography

Session Chair: Belen Masia

- Computational Bounce Flash for Indoor Portraits
- Deep Joint Demosaicking and Denoising
- Burst photography for high dynamic range and low-light imaging on mobile cameras
- Learning-Based View Synthesis for Light Field Cameras
- Birefractive Stereo Imaging for Single-Shot Depth Acquisition

The Venetian Macao, Sicily 2501, Level 1

Tuesday, December 06, 2016

2:15 PM – 4:00 PM

Shape Semantics

Session Chair: Hui Huang

- Relationship Templates for Creating Scene Variations
- Shape2Vec: semantic-based descriptors for 3D shapes, sketches and images
- Functionality Preserving Shape Style Transfer
- A Scalable Active Framework for Region Annotation in 3D Shape Collections
- Example-based Sketch Segmentation and Labeling using CRFs

The Venetian Macao, Sicily 2503, Level 1

Tuesday, December 06, 2016

2:15 PM – 4:00 PM

High Resolution

Session Chair: Jiaya Jia

- Efficient GPU Path Rendering Using Scanline Rasterization
- Pyramid of Arclength Descriptor for Generating Collage of Shapes
- GST: GPU-Decodable Supercompressed Textures
- Scalable Inside-Out Image-Based Rendering

The Venetian Macao, Sicily 2505, Level 1

Tuesday, December 06, 2016

2:15 PM – 4:00 PM

Scanning & Tracking People

Session Chair: Xin Tong

- Corrective 3D Reconstruction of Lips from Monocular Video
- Model-Based Teeth Reconstruction
- High-Fidelity Facial and Speech Animation for VR HMDs
- Sphere-Meshes for Real-Time Hand Modeling and Tracking

The Venetian Macao, Sicily 2501, Level 1

Tuesday, December 06, 2016

4:15 PM – 6:00 PM

Sound & Pattern Synthesis

Session Chair: Dinesh Manocha

- Interactive Sound Propagation with Bidirectional Path Tracing
- Crumpling Sound Synthesis
- gTangle: a Grammar for the Procedural Generation of Tangle Patterns
- Representing and Scheduling Procedural Generation using Operator Graphs
- Printone: Interactive Resonance Simulation for Free-form Print-wind Instrument Design

The Venetian Macao, Sicily 2503, Level 1

Tuesday, December 06, 2016

4:15 PM – 6:00 PM

All About Sampling

Session Chair: Karol Myszkowski

- Robust Light Transport Simulation via Metropolized Bidirectional Estimators
- Temporal Gradient-Domain Path Tracing
- Low-Discrepancy Blue Noise Sampling
- Stair Blue Noise Sampling
- Texture Space Caching and Reconstruction for Ray Tracing

The Venetian Macao, Sicily 2501, Level 1

Wednesday, December 07, 2016

9:00 AM – 10:45 AM

Parameterization & Remeshing

Session Chair: Eugene Zhang

- Bounded Distortion Parametrization in the Space of Metrics
- Computing Inversion-Free Mappings by Simplex Assembly
- Hyperbolic Orbifold Tutte Embeddings
- Interactively Controlled Quad Remeshing of High Resolution 3D Models

The Venetian Macao, Sicily 2503, Level 1

Wednesday, December 07, 2016

9:00 AM – 10:45 AM

Fantastic Elastics

Session Chair: Paul Kry

- High-Resolution Interaction with Corotational Coarsening Models
- Descent Methods for Elastic Body Simulation on the GPU
- Reconstructing Personalized Anatomical Models for Physics-based Body Animation
- Vivace: a Practical Gauss-Seidel Method for Stable Soft Body Dynamics

The Venetian Macao, Sicily 2505, Level 1

Wednesday, December 07, 2016

9:00 AM – 10:45 AM

Fabrication

Session Chair: Peter Wonka

- FlexMolds: Automatic Design of Flexible Shells for Molding
- FrameFab: Robotic Fabrication of Frame Shapes
- Fabrication of freeform objects by principal strips
- Stochastic Structural Analysis for Context-Aware Design and Fabrication
- Computational Multicopter Design

The Venetian Macao, Sicily 2501, Level 1

Wednesday, December 07, 2016

2:15 PM – 4:00 PM

Meshes & Fields

Session Chair: Hongbo Fu

- Mesh Denoising via Cascaded Normal Regression
- Practical 3D Frame Field Generation
- Interchangeable Components for Hands-On Assembly Based Modelling
- Fast and Reliable Example-Based Mesh IK for Stylized Deformations

The Venetian Macao, Sicily 2503, Level 1

Wednesday, December 07, 2016

2:15 PM – 4:00 PM

Materials

Session Chair: Oliver Deussen

- Simultaneous Acquisition of Microscale Reflectance and Normals
- An intuitive control space for material appearance
- Recovering Shape and Spatially-Varying Surface Reflectance under Unknown Illumination
- Minimal BRDF Sampling for Two-Shot Near-Field Reflectance Acquisition
- Sparse-as-Possible SVBRDF Acquisition

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Wednesday, December 07, 2016

4:15 PM – 6:00 PM

Tessellations

Session Chair: Jin Huang

- Power Coordinates: A Geometric Construction of Barycentric Coordinates on Convex Polytopes
- Optimal Voronoi Tessellations with Hessian-based Anisotropy
- Manifold Differential Evolution (MDE): A Global Optimization Method for Geodesic Centroidal Voronoi Tessellations on Meshes
- Centroidal Power Diagrams with Capacity Constraints: Computation, Applications and Extension

The Venetian Macao, Sicily 2503, Level 1
Wednesday, December 07, 2016
4:15 PM – 6:00 PM

Smash & Splash

Session Chair: Jos Stam

- SMASH: Physics-guided Reconstruction of Collisions from Videos
- Eulerian Solid-Fluid Coupling
- A scalable Schur-complement fluids solver for heterogeneous compute platforms
- Dispersion Kernels for Water Wave Simulation

The Venetian Macao, Sicily 2505, Level 1
Wednesday, December 07, 2016
4:15 PM – 6:00 PM

Filtering Images

Session Chair: Kari Pulli

- Bilateral Guided Upsampling
- Parallel Recursive Filtering of Infinite Input Extensions
- Rapid, Detail-Preserving Image Downscaling
- VizGen: Accelerating Visual Computing Prototypes in Dynamic Languages

The Venetian Macao, Sicily 2501, Level 1
Thursday, December 08, 2016
9:00 AM – 10:45 AM

Human Motion

Session Chair: Baoquan Chen

- Authoring Directed Gaze for Full-Body Motion Capture
- EgoCap: Egocentric Marker-less Motion Capture with Two Fisheye Cameras
- Data-driven Inverse Dynamics for Human Motion
- WarpDriver: Context-Aware Probabilistic Motion Prediction for Crowd Simulation
- Gesture3D: Posing 3D Characters via Gesture Drawings

The Venetian Macao, Sicily 2503, Level 1
Thursday, December 08, 2016
9:00 AM – 10:45 AM

Complex Rendering

Session Chair: Diego Gutierrez

- Downsampling Scattering Parameters for Rendering Anisotropic Media
- Adaptive Matrix Column Sampling and Completion for Rendering Participating Media
- Efficient Rendering of Heterogeneous Polydisperse Granular Media
- Image-space Control Variates for Rendering
- Simulating the structure and texture of solid wood

The Venetian Macao, Sicily 2501, Level 1

Thursday, December 08, 2016

11:00 AM – 12:45 PM

Data Driven Modeling

Session Chair: Yang Liu

- Interactive Mechanism Modeling from Multi-view Images
- Block Assembly for Global Registration of Building Scans
- 3D Attention-Driven Depth Acquisition for Object Identification
- Automated View and Path Planning for Scalable Multi-Object 3D Scanning
- Directing User Attention via Visual Flow on Web Designs

The Venetian Macao, Sicily 2503, Level 1

Thursday, December 08, 2016

11:00 AM – 12:45 PM

All About Seeing (Closing Session)

Session Chair: Daniel Aliaga

- Blocking Harmful Blue Light while Preserving Image Color Appearance
- Motion Parallax in Stereo 3D: Model and Applications
- Unsupervised Texture Transfer from Images to Model Collections
- Regional Foremost Matching for Internet Scene Images
- Towards Foveated Rendering for Gaze-Tracked Virtual Reality

The Venetian Macao, Sicily 2501, Level 1

Thursday, December 08, 2016

2:15 PM – 4:00 PM