HALL B5 (1) (5F B BLOCK)
TECHNICAL PAPERS SCHEDULE

Session Chair; Live from TIF, Japan | Presented Virtually | Live Q&A

All sessions available on-demand viewing on our virtual platform after the live session unless otherwise stated

Japan Time	TUESDAY, 14 DECEMBER 2021
09:00 - 09:55	**01. Character Simulation** • PBNS: Physically Based Neural Simulation for Unsupervised Garment Pose Space Deformation • Motion Recommendation for Online Character Control • SuperTrack: Motion Tracking for Physically Simulated Characters using Supervised Learning • Modeling Clothing as a Separate Layer for an Animatable Human Avatar • Transflower: probabilistic autoregressive dance generation with multimodal attention
10:00 – 10:55	**02. Turbulence and Fluids** • Predicting High-Resolution Turbulence Details In Space and Time • Fast and Versatile Fluid-Solid Coupling for Turbulent Flow Simulation • Ships, Splashes, and Waves on a Vast Ocean • Spiral-Spectral Fluid Simulation • FrictionalMonolith: A Monolithic Optimization-based Approach for Granular Flow with Contact-Aware Rigid-Body Coupling
11:00 – 11:55	**03. Physically-based Simulation and Motion Control** • Human Dynamics from Monocular Video with Dynamic Camera Movements • Foids: Bio-Inspired Fish Simulation for Generating Synthetic Datasets • Weatherscapes: Nowcasting Heat Transfer and Water Continuity • Camera Keyframing with Style and Control • A Material Point Method for Nonlinearly Magnetized Materials
12:00 – 12:55	**04. Computational Photography** • Time-Travel Rephotography • Polarimetric Spatio-Temporal Light Transport Probing • Kaleidoscopic Structured Light • Layered Neural Atlases for Consistent Video Editing • Aesthetic-guided Outward Image Cropping
13:00 – 13:55	**05: Synthesizing Human Images** • SketchHairSalon: Deep Sketch-based Hair Image Synthesis • Neural Actor: Neural Free-view Synthesis of Human Actors with Pose Control • Barbershop: GAN-based Image Compositing using Segmentation Masks • EyelashNet: A Dataset and A Baseline Method for Eyelash Matting • Pose with Style: Detail-Preserving Pose-Guided Image Synthesis with Conditional StyleGAN
14:30 – 17:30	**Digging into the Technical Papers (in Japanese)** [Birds of a Feather Session]

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Japan Time	WEDNESDAY, 15 DECEMBER 2021
09:00 - 09:55	**06: Facial Animation and Rendering** • Live Speech Portraits: Real-Time Photorealistic Talking-Head Animation • Rendering with Style: Combining Traditional and Neural Approaches for High-Quality Face Rendering • Semi-supervised video-driven facial animation transfer for production • FreeStyleGAN: Free-view Editable Portrait Rendering with the Camera Manifold
10:00 – 10:55	**07: Scene Synthesis and Navigation** • Synthesizing Scene-Aware Virtual Reality Teleport Graphs • Continuous Aerial Path Planning for 3D Urban Scene Reconstruction • Aerial Path Planning for Online Real-Time Exploration and Offline High-Quality Reconstruction of Large-Scale Urban Scenes • Joint Computational Design of Workspaces and Workplans • AutoMate: A Dataset and Learning Approach for Automatic Mating of CAD Assemblies
11:00 – 11:55	**08: Natural Phenomena** • TreePartNet: Neural Decomposition of Point Clouds for 3D Tree Reconstruction • ICTree: Automatic Perceptual Metrics for Tree Models • Learning to Reconstruct Botanical Trees from Single Images • Modeling Flower Pigmentation Patterns • Practical Pigment Mixing for Digital Painting
12:00 – 12:55	**09. Neural Rendering** • HyperNeRF: A Higher-Dimensional Representation for Topologically Varying Neural Radiance Fields • NeRFactor: Neural Factorization of Shape and Reflectance Under an Unknown Illumination • Dynamic Neural Garments • Neural Frame Interpolation for Rendered Content • Neural Radiosity
13:00 – 13:55	**10: Audio and Visual Displays** • VR Social Copresence with Light Field Displays • Project Starline: A high-fidelity telepresence system • Reproducing Reality with a High-Dynamic-Range Multi-Focal Stereo Display • Neural 3D Holography: Learning Accurate Wave Propagation Models for 3D Holographic Virtual and Augmented Reality Displays • Binaural Audio Generation via Multi-task Learning
14:30 – 17:30	**Digging into the Technical Papers (in Japanese)** [Birds of a Feather Session]

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Japan Time	THURSDAY, 16 DECEMBER 2021
09:00 - 09:55	**11. NPR and Digital Art** • AdaptiBrush: Adaptive General and Predictable VR Ribbon Brush • Multi-Class Inverted Stippling • Shading Rig: Dynamic Art-Directable Stylised Shading for 3D Characters • Physically-based Feature Line Rendering • SketchGNN: Semantic Sketch Segmentation with Graph Neural
10:00 – 10:55	**12: Geometry Processing and Simulation** • Interactive Cutting and Tearing in Projective Dynamics with Progressive Cholesky Updates • Integer Coordinates for Intrinsic Geometry Processing • Generalized Fluid Carving With Fast Lattice-Guided Seam Computation • "Locking-Proof Tetrahedra" • Sum-of-Squares Geometry Processing
11:00 – 11:55	**13. Meshing** • Generalized Adaptive Refinement for Grid-based Hexahedral Meshing • Q-zip: Singularity Editing Primitive for Quad Meshes • Convex polyhedral meshing for robust solid modeling • Interactive All-Hex Meshing via Cuboid Decomposition
12:00 – 12:55	**14. Surface Parameterization and Texturing** • TM-NET: Deep Generative Networks for Textured Meshes • I ❤ LA: Compilable Markdown for Linear Algebra • Computing Sparse Cones with Bounded Distortion for Conformal Parameterizations • Optimizing Global Injectivity for Constrained Parameterization • Efficient and Robust Discrete Conformal Equivalence with Boundary
13:00 – 13:55	**15. Curves and Surfaces** • DeepVecFont: Synthesizing High-quality Vector Fonts via Dual-modality Learning • Repulsive Surfaces • Keypoint-Driven Line Drawing Vectorization via PolyVector Flow • Differentiable Surface Triangulation • Repulsive Curves
14:30 – 17:30	**Digging into the Technical Papers (in Japanese)** [Birds of a Feather Session]

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Japan Time	FRIDAY, 16 DECEMBER 2021
09:00 - 09:55	**16. Fabrication** • Spatial-Temporal Motion Control via Composite Cam-follower Mechanisms • Generalized Deployable Elastic Geodesic Grids • Optimizing Contact-based Assemblies • Volume decomposition for two-piece rigid casting • Computational Design of Planar Multistable Compliant Structures
10:00 – 10:55	**17. Reconstruction** • Deep3DLayout: 3D Reconstruction of an Indoor Layout from a Spherical Panoramic Image • Intuitive and Efficient Roof Modeling for Reconstruction and Synthesis • Large Steps in Inverse Rendering of Geometry • Neural Marching Cubes • Supervoxel Convolution for Online 3D Semantic Segmentation
11:00 – 11:55	**18. Sampling and Denoising** • Cascaded Sobol' Sampling • Ensemble Denoising for Monte Carlo Renderings • Path Graphs: Iterative Path Space Filtering • Learning to Cluster for Rendering with Many Lights • Monte Carlo Denoising via Auxiliary Feature Guided Self-Attention
12:00 – 12:55	**19. Real-time Rendering** • Fast Volume Rendering with Spatiotemporal Reservoir Resampling • Perceptual Model for Adaptive Local Shading and Refresh Rate • ExtraNet: Real-time Extrapolated Rendering for Low-latency Temporal Supersampling • Tessellation-Free Displacement Mapping for Ray Tracing • Fast and Accurate Spherical Harmonics Products
13:00 – 13:55	**20. Light Interactions and Differentiable Rendering** • Differentiable Time-Gated Rendering • Differentiable Transient Rendering • Generative Modelling of BRDF Textures from Flash Images • Physical Light-Matter Interaction in Hermite-Gauss Space • Beyond Mie Theory: Systematic Computation of Bulk Scattering Parameters based on Microphysical Wave Optics
14:00 – 14:30	Introduction to SIGGRAPH Asia Technical Papers 2022
14:30 – 17:30	**Digging into the Technical Papers (in Japanese)** [Birds of a Feather Session]