1, TITLE: Blending camera and 77 GHz radar sensing for equitable, robust plethysmography
https://dl.acm.org/doi/abs/10.1145/3528223.3530161
AUTHORS: Alexander Vilesov, Pradyumna Chari, Adnan Armouti, Anirudh Bindiganavale Harish, Kimaya Kulkarni, Ananya Deoghare, Laleh Jalilian, Achuta Kadambi
HIGHLIGHT: In this paper, we show through light transport analysis that the camera modality is fundamentally biased against darker skin tones.

2, TITLE: Seeing through obstructions with diffractive cloaking
https://dl.acm.org/doi/abs/10.1145/3528223.3530185
AUTHORS: Zheng Shi, Yuval Bahat, Seung-Hwan Baek, Qiang Fu, Hadi Amata, Xiao Li, Praneeth Chakravarthula, Wolfgang Heidrich, Felix Heide
HIGHLIGHT: In this work, we propose a monocular single-shot imaging approach that optically cloaks obstructions by emulating a large array.

3, TITLE: High dynamic range and super-resolution from raw image bursts
https://dl.acm.org/doi/abs/10.1145/3528223.3530180
AUTHORS: Bruno Lecouat, Thomas Eboli, Jean Ponce, Julien Mairal
HIGHLIGHT: This paper introduces the first approach (to the best of our knowledge) to the reconstruction of highresolution, high-dynamic range color images from raw photographic bursts captured by a handheld camera with exposure bracketing.

4, TITLE: EMBER: exact mesh booleans via efficient & robust local arrangements
https://dl.acm.org/doi/abs/10.1145/3528223.3530181
AUTHORS: Philip Trettner, Julius Nehring-Wirxel, Leif Kobbelt
HIGHLIGHT: We present a novel method, EMBER, to compute Boolean operations on polygon meshes which is exact, reliable, and highly performant at the same time.

5, TITLE: TopoCut: fast and robust planar cutting of arbitrary domains
https://dl.acm.org/doi/abs/10.1145/3528223.3530149
AUTHORS: Xianzhong Fang, Mathieu Desbrun, Hujun Bao, Jin Huang
HIGHLIGHT: In this paper, we introduce a new approach to planar cutting of 3D domains that substitutes topological inference for numerical ordering through a novel mesh data structure, and revert to exact numerical evaluations only in the few rare cases where it is strictly necessary.

6, TITLE: Robust computation of implicit surface networks for piecewise linear functions
https://dl.acm.org/doi/abs/10.1145/3528223.3530176
AUTHORS: Xingyi Du, Qingnan Zhou, Nathan Carr, Tao Ju
HIGHLIGHT: We present a unified approach for computing both types of surface networks for piecewise linear functions defined on a tetrahedral grid.

7, TITLE: Approximate convex decomposition for 3D meshes with collision-aware concavity and tree search
https://dl.acm.org/doi/abs/10.1145/3528223.3530103
AUTHORS: Xinyue Wei, Minghua Liu, Zhan Ling, Hao Su
HIGHLIGHT: While prior works can capture the global structure of input shapes, they may fail to preserve fine-grained details (e.g., filling a toaster's slots), which are critical for retaining the functionality of objects in interactive environments. In this paper, we propose a novel method that addresses the limitations of existing approaches from three perspectives: (a) We introduce a novel collision-aware concavity metric that examines the distance between a shape and its convex hull from both the boundary and the interior.

8, TITLE: Developability-driven piecewise approximations for triangular meshes
https://dl.acm.org/doi/abs/10.1145/3528223.3530117
AUTHORS: Zheng-Yu Zhao, Qing Fang, Wenqing Ouyang, Zheng Zhang, Ligang Liu, Xiao-Ming Fu
HIGHLIGHT: We propose a novel method to compute a piecewise mesh with a few developable patches and a small approximation error for an input triangular mesh.

9, TITLE: Unbiased inverse volume rendering with differential trackers
https://dl.acm.org/doi/abs/10.1145/3528223.3530073
AUTHORS: Merlin Nimier-David, Thomas Müller, Alexander Keller, Wenzel Jakob
HIGHLIGHT: Instead, we propose using a new sampling strategy: differential ratio tracking, which is unbiased, yields low-variance gradients, and runs in linear time.

10, TITLE: Procedural texturing of solid wood with knots
https://dl.acm.org/doi/abs/10.1145/3528223.3530081
AUTHORS: Maria Larsson, Takashi Ijiri, Hironori Yoshida, Johannes A. J. Huber, Magnus Fredriksson, Olof Broman, Takeo Igarashi
HIGHLIGHT: We present a procedural framework for modeling the annual ring pattern of solid wood with knots.

11, TITLE: MatFormer: a generative model for procedural materials
https://dl.acm.org/doi/abs/10.1145/3528223.3530173
AUTHORS: Paul Guerrero, MiloÅ¡ HaÅ¡an, Kalyan Sunkavalli, Radomír M?ch, Tamy Boubekeur, Niloy J. Mitra

HIGHLIGHT: We present MatFormer, a generative model that can produce a diverse set of high-quality procedural materials with complex spatial patterns and appearance.

12, TITLE: Practical level-of-detail aggregation of fur appearance
https://dl.acm.org/doi/abs/10.1145/3528223.3530105
AUTHORS: Junqiu Zhu, Sizhe Zhao, Lu Wang, Yanning Xu, Ling-Qi Yan
HIGHLIGHT: In this paper, we aim at reducing the number of fur fibers while preserving realistic fur appearance.

13, TITLE: Unbiased and consistent rendering using biased estimators
https://dl.acm.org/doi/abs/10.1145/3528223.3530160
AUTHORS: Zackary Misso, Benedikt Bitterli, Iliyan Georgiev, Wojciech Jarosz
HIGHLIGHT: We introduce a general framework for transforming biased estimators into unbiased and consistent estimators for the same quantity.

14, TITLE: A fast unsmoothed aggregation algebraic multigrid framework for the large-scale simulation of incompressible flow
https://dl.acm.org/doi/abs/10.1145/3528223.3530109
AUTHORS: Han Shao, Libo Huang, Dominik L. Michels
HIGHLIGHT: In this contribution, we present an Unsmoothed Aggregation Algebraic MultiGrid (UAAMG) method with a multi-color Gauss-Seidel smoother, which consistently solves the variational viscosity equation in a few iterations for various material parameters.

15, TITLE: Loki: a unified multiphysics simulation framework for production
https://dl.acm.org/doi/abs/10.1145/3528223.3530058
AUTHORS: Steve Lesser, Alexey Stomakhin, Gilles Daviet, Joel Wretborn, John Edholm, Noh-Hoon Lee, Eston Schweickart, Xiao Zhai, Sean Flynn, Andrew Moffat
HIGHLIGHT: We introduce Loki, a new framework for robust simulation of fluid, rigid, and deformable objects with non-compromising fidelity on any single element, and capabilities for coupling and representation transitions across multiple elements.

16, TITLE: Automatic quantization for physics-based simulation
https://dl.acm.org/doi/abs/10.1145/3528223.3530154
AUTHORS: Jiafeng Liu, Haoyang Shi, Siyuan Zhang, Yin Yang, Chongyang Ma, Weiwei Xu
HIGHLIGHT: In this paper, we propose a novel framework to allow users to obtain a quantization scheme by simply specifying either an error bound or a memory compression rate.

17, TITLE: Energetically consistent inelasticity for optimization time integration
https://dl.acm.org/doi/abs/10.1145/3528223.3530072
AUTHORS: Xuan Li, Minchen Li, Chenfanfu Jiang
HIGHLIGHT: In this paper, we propose Energetically Consistent Inelasticity (ECI), a new formulation for modeling and discretizing finite strain elastoplasticity/viscoelasticity in a way that is compatible with optimization-based time integrators.

18, TITLE: Grid-free Monte Carlo for PDEs with spatially varying coefficients
https://dl.acm.org/doi/abs/10.1145/3528223.3530134
AUTHORS: Rohan Sawhney, Dario Seyb, Wojciech Jarosz, Keenan Crane
HIGHLIGHT: Our main contribution is to extend the walk on spheres (WoS) algorithm from constant- to variable-coefficient problems, by drawing on techniques from volumetric rendering.

19, TITLE: Variational quadratic shape functions for polygons and polyhedra
https://dl.acm.org/doi/abs/10.1145/3528223.3530137
AUTHORS: Astrid Bunge, Philipp Herholz, Olga Sorkine-Hornung, Mario Botsch, Michael Kazhdan
HIGHLIGHT: Our work proposes variationally optimized piecewise quadratic shape functions for polygons and polyhedra, which generalize quadratic P2 elements, exactly reproduce them on simplices, and inherit their beneficial numerical properties.

20, TITLE: NeAT: neural adaptive tomography
https://dl.acm.org/doi/abs/10.1145/3528223.3530121
AUTHORS: Darius Rückert, Yuanhao Wang, Rui Li, Ramzi Idoughi, Wolfgang Heidrich
HIGHLIGHT: In this paper, we present Neural Adaptive Tomography (NeAT), the first adaptive, hierarchical neural rendering pipeline for tomography.

21, TITLE: NeROIC: neural rendering of objects from online image collections
https://dl.acm.org/doi/abs/10.1145/3528223.3530177
AUTHORS: Zhengfei Kuang, Kyle Olszewski, Menglei Chai, Zeng Huang, Panos Achlioptas, Sergey Tulyakov
HIGHLIGHT: We present a novel method to acquire object representations from online image collections, capturing high-quality geometry and material properties of arbitrary objects from photographs with varying cameras, illumination, and backgrounds.

22, TITLE: Compatible intrinsic triangulations
https://dl.acm.org/doi/abs/10.1145/3528223.3530175
AUTHORS: Kenshi Takayama
HIGHLIGHT: We propose a simple method utilizing intrinsic triangulations, operating directly on the original surfaces without going through any intermediate domains such as a plane or a sphere.

23, TITLE: Computing sparse integer-constrained cones for conformal parameterizations
https://dl.acm.org/doi/abs/10.1145/3528223.3530118
AUTHORS: Mo Li, Qing Fang, Wenqing Ouyang, Ligang Liu, Xiao-Ming Fu
HIGHLIGHT: We propose a novel method to generate sparse integer-constrained cone singularities with low distortion constraints for conformal parameterizations.

24, TITLE: Which cross fields can be quadrangulated?: global parameterization from prescribed holonomy signatures
https://dl.acm.org/doi/abs/10.1145/3528223.3530187
AUTHORS: Hanxiao Shen, Leyi Zhu, Ryan Capouellez, Daniele Panozzo, Marcel Campen, Denis Zorin
HIGHLIGHT: We describe a method for the generation of seamless surface parametrizations with guaranteed local injectivity and full control over holonomy.

25, TITLE: Volume parametrization quantization for hexahedral meshing
https://dl.acm.org/doi/abs/10.1145/3528223.3530123
AUTHORS: Hendrik Brückler, David Bommes, Marcel Campen
HIGHLIGHT: We present a method to robustly quantize volume parametrizations, i.e., to determine guaranteed valid choices of integers for 3D integer-grid maps.

26, TITLE: Simulation and optimization of magnetoelastic thin shells
https://dl.acm.org/doi/abs/10.1145/3528223.3530142
AUTHORS: Xuwen Chen, Xingyu Ni, Bo Zhu, Bin Wang, Baoquan Chen
HIGHLIGHT: In this paper, we propose a novel computational method for forward simulation and inverse design of magnetoelastic thin shells.

27, TITLE: True seams: modeling seams in digital garments
https://dl.acm.org/doi/abs/10.1145/3528223.3530128
AUTHORS: Alejandro Rodríguez, Gabriel Cirio
HIGHLIGHT: In this paper, we present a method that models seams following their true, real-life construction.

28, TITLE: A GPU-based multilevel additive schwarz preconditioner for cloth and deformable body simulation
https://dl.acm.org/doi/abs/10.1145/3528223.3530085
AUTHORS: Botao Wu, Zhendong Wang, Huamin Wang
HIGHLIGHT: In this paper, we wish to push the limit of real-time cloth and deformable body simulation to a higher level with 50K to 500K vertices, based on the development of a novel GPU-based multilevel additive Schwarz (MAS) pre-conditioner.

29, TITLE: A general two-stage initialization for sag-free deformable simulations
https://dl.acm.org/doi/abs/10.1145/3528223.3530165
AUTHORS: Jerry Hsu, Nghia Truong, Cem Yuksel, Kui Wu
HIGHLIGHT: We introduce a novel solution to the sagging problem that can be applied to a variety of simulation systems and materials.

30, TITLE: Estimation of yarn-level simulation models for production fabrics
https://dl.acm.org/doi/abs/10.1145/3528223.3530167
AUTHORS: Georg Sperl, Rosa M. Sánchez-Banderas, Manwen Li, Chris Wojtan, Miguel A. Otaduy
HIGHLIGHT: This paper introduces a methodology for inverse-modeling of yarn-level mechanics of cloth, based on the mechanical response of fabrics in the real world.

31, TITLE: A unified newton barrier method for multibody dynamics
https://dl.acm.org/doi/abs/10.1145/3528223.3530076
AUTHORS: Yunuo Chen, Minchen Li, Lei Lan, Hao Su, Yin Yang, Chenfanfu Jiang
HIGHLIGHT: We present a simulation framework for multibody dynamics via a universal variational integration.

32, TITLE: Affine body dynamics: fast, stable and intersection-free simulation of stiff materials
https://dl.acm.org/doi/abs/10.1145/3528223.3530064
AUTHORS: Lei Lan, Danny M. Kaufman, Minchen Li, Chenfanfu Jiang, Yin Yang
HIGHLIGHT: In this paper we revisit the stiff body problem and present ABD, a simple and highly effective affine body dynamics framework, which significantly improves state-of-the-art for simulating stiff-body dynamics.

33, TITLE: Fast evaluation of smooth distance constraints on co-dimensional geometry
https://dl.acm.org/doi/abs/10.1145/3528223.3530093
AUTHORS: Abhishek Madan, David I. W. Levin
HIGHLIGHT: We present a new method for computing a smooth minimum distance function based on the LogSumExp function for point clouds, edge meshes, triangle meshes, and combinations of all three.

34, TITLE: Penetration-free projective dynamics on the GPU
https://dl.acm.org/doi/abs/10.1145/3528223.3530069
AUTHORS: Lei Lan, Guanqun Ma, Yin Yang, Changxi Zheng, Minchen Li, Chenfanfu Jiang
HIGHLIGHT: We present a GPU algorithm for deformable simulation.

35, TITLE: Contact-centric deformation learning
https://dl.acm.org/doi/abs/10.1145/3528223.3530182
AUTHORS: Cristian Romero, Dan Casas, Maurizio M. Chiaramonte, Miguel A. Otaduy
HIGHLIGHT: We propose a novel method to machine-learn highly detailed, nonlinear contact deformations for real-time dynamic simulation.

36, TITLE: Adaptive rigidification of elastic solids
https://dl.acm.org/doi/abs/10.1145/3528223.3530124
AUTHORS: Alexandre Mercier-Aubin, Paul G. Kry, Alexandre Winter, David I. W. Levin
HIGHLIGHT: We present a method for reducing the computational cost of elastic solid simulation by treating connected sets of non-deforming elements as rigid bodies.

37, TITLE: Disentangling random and cyclic effects in time-lapse sequences
https://dl.acm.org/doi/abs/10.1145/3528223.3530170
AUTHORS: Erik Härkönen, Miika Aittala, Tuomas Kynkäänniemi, Samuli Laine, Timo Aila, Jaakko Lehtinen
HIGHLIGHT: However, playing a long time-lapse sequence back as a video often results in distracting flicker due to random effects, such as weather, as well as cyclic effects, such as the day-night cycle. We introduce the problem of disentangling time-lapse sequences in a way that allows separate, after-the-fact control of overall trends, cyclic effects, and random effects in the images, and describe a technique based on data-driven generative models that achieves this goal.

38, TITLE: Rewriting geometric rules of a GAN
https://dl.acm.org/doi/abs/10.1145/3528223.3530065
AUTHORS: Sheng-Yu Wang, David Bau, Jun-Yan Zhu
HIGHLIGHT: However, the current machine learning approaches miss a key element of the creative process - the ability to synthesize things that go far beyond the data distribution and everyday experience. To begin to address this issue, we enable a user to "warp" a given model by editing just a handful of original model outputs with desired geometric changes.

39, TITLE: ASSET: autoregressive semantic scene editing with transformers at high resolutions
https://dl.acm.org/doi/abs/10.1145/3528223.3530172
AUTHORS: Difan Liu, Sandesh Shetty, Tobias Hinz, Matthew Fisher, Richard Zhang, Taesung Park, Evangelos Kalogerakis
HIGHLIGHT: We present ASSET, a neural architecture for automatically modifying an input high-resolution image according to a user's edits on its semantic segmentation map.

40, TITLE: Generalized resampled importance sampling: foundations of ReSTIR
https://dl.acm.org/doi/abs/10.1145/3528223.3530158
AUTHORS: Daqi Lin, Markus Kettunen, Benedikt Bitterli, Jacopo Pantaleoni, Cem Yuksel, Chris Wyman
HIGHLIGHT: We introduce generalized resampled importance sampling (GRIS) to extend the theory, allowing RIS on correlated samples, with unknown PDFs and taken from varied domains.

41, TITLE: R2E2: low-latency path tracing of terabyte-scale scenes using thousands of cloud CPUs
https://dl.acm.org/doi/abs/10.1145/3528223.3530171
AUTHORS: Sadjad Fouladi, Brennan Shacklett, Fait Poms, Arjun Arora, Alex Ozdemir, Deepti Raghavan, Pat Hanrahan, Kayvon Fatahalian, Keith Winstein
HIGHLIGHT: In this paper we explore the viability of path tracing massive scenes using a "supercomputer" constructed on-the-fly from thousands of small, serverless cloud computing nodes.

42, TITLE: SPCBPT: subspace-based probabilistic connections for bidirectional path tracing
https://dl.acm.org/doi/abs/10.1145/3528223.3530183
AUTHORS: Fujia Su, Sheng Li, Guoping Wang
HIGHLIGHT: We present a novel approach, SPCBPT, for probabilistic connections that constructs the light selection distribution in sub-path space.

43, TITLE: Modeling and rendering non-euclidean spaces approximated with concatenated polytopes
https://dl.acm.org/doi/abs/10.1145/3528223.3530186
AUTHORS: Seung-Wook Kim, Jaehyung Doh, Junghyun Han
HIGHLIGHT: This paper proposes to approximate a manifold with polytopes.

44, TITLE: Regression-based Monte Carlo integration
https://dl.acm.org/doi/abs/10.1145/3528223.3530095
AUTHORS: Corentin Salaün, Adrien Gruson, Binh-Son Hua, Toshiya Hachisuka, Gurprit Singh
HIGHLIGHT: Unlike prior work, our resulting estimator is provably better than or equal to the conventional Monte Carlo estimator.

45, TITLE: Efficiency-aware multiple importance sampling for bidirectional rendering algorithms
https://dl.acm.org/doi/abs/10.1145/3528223.3530126
AUTHORS: Pascal Grittmann, Ömercan Yazici, Iliyan Georgiev, Philipp Slusallek
HIGHLIGHT: We propose a general method to improve MIS efficiency: By cheaply estimating the efficiencies of various technique and sample-count combinations, we can pick the best one.

46, TITLE: EARS: efficiency-aware russian roulette and splitting
https://dl.acm.org/doi/abs/10.1145/3528223.3530168
AUTHORS: Alexander Rath, Pascal Grittmann, Sebastian Herholz, Philippe Weier, Philipp Slusallek
HIGHLIGHT: We instead iteratively learn optimal Russian roulette and splitting factors during rendering, using a simple and lightweight data structure.

47, TITLE: Shape dithering for 3D printing
https://dl.acm.org/doi/abs/10.1145/3528223.3530129
AUTHORS: Mostafa Morsy Abdelkader Morsy, Alan Brunton, Philipp Urban
HIGHLIGHT: We present an efficient, purely geometric, algorithmic, and parameter free approach to improve surface quality and accuracy in voxel-controlled 3D printing by counteracting quantization artifacts.

48, TITLE: Semantically supervised appearance decomposition for virtual staging from a single panorama
https://dl.acm.org/doi/abs/10.1145/3528223.3530148
AUTHORS: Tiancheng Zhi, Bowei Chen, Ivaylo Boyadzhiev, Sing Bing Kang, Martial Hebert, Srinivasa G. Narasimhan
HIGHLIGHT: We describe a novel approach to decompose a single panorama of an empty indoor environment into four appearance components: specular, direct sunlight, diffuse and diffuse ambient without direct sunlight.

49, TITLE: MatBuilder: mastering sampling uniformity over projections
https://dl.acm.org/doi/abs/10.1145/3528223.3530063
AUTHORS: Loïs Paulin, Nicolas Bonneel, David Coeurjolly, Jean-Claude Iehl, Alexander Keller, Victor Ostromoukhov
HIGHLIGHT: We propose a novel approach by showing that uniformity constraints can be expressed as an integer linear program that results in a sampler with the desired properties.

50, TITLE: Sketch2Pose: estimating a 3D character pose from a bitmap sketch
https://dl.acm.org/doi/abs/10.1145/3528223.3530106
AUTHORS: Kirill Brodt, Mikhail Bessmeltsev
HIGHLIGHT: Artists frequently capture character poses via raster sketches, then use these drawings as a reference while posing a 3D character in a specialized 3D software --- a time-consuming process, requiring specialized 3D training and mental effort. We tackle this challenge by proposing the first system for automatically inferring a 3D character pose from a single bitmap sketch, producing poses consistent with viewer expectations.

51, TITLE: CLIPasso: semantically-aware object sketching
https://dl.acm.org/doi/abs/10.1145/3528223.3530068
AUTHORS: Yael Vinker, Ehsan Pajouheshgar, Jessica Y. Bo, Roman Christian Bachmann, Amit Haim Bermano, Daniel Cohen-Or, Amir Zamir, Ariel Shamir
HIGHLIGHT: We present CLIPasso, an object sketching method that can achieve different levels of abstraction, guided by geometric and semantic simplifications.

52, TITLE: Detecting viewer-perceived intended vector sketch connectivity
https://dl.acm.org/doi/abs/10.1145/3528223.3530097
AUTHORS: Jerry Yin, Chenxi Liu, Rebecca Lin, Nicholas Vining, Helge Rhodin, Alla Sheffer
HIGHLIGHT: We propose a novel, robust algorithm that extracts viewer-perceived stroke connectivity from inexact free-form vector drawings by leveraging observations about local and global factors that impact human perception of inter-stroke connectivity.

53, TITLE: Piecewise-smooth surface fitting onto unstructured 3D sketches
https://dl.acm.org/doi/abs/10.1145/3528223.3530100
AUTHORS: Emilie Yu, Rahul Arora, J. Andreas Bærentzen, Karan Singh, Adrien Bousseau
HIGHLIGHT: We propose a method to transform unstructured 3D sketches into piecewise smooth surfaces that preserve sketched geometric features.

54, TITLE: Rapid design of articulated objects
https://dl.acm.org/doi/abs/10.1145/3528223.3530092
AUTHORS: Joon Hyub Lee, Hanbit Kim, Seok-Hyung Bae
HIGHLIGHT: We present a novel 3D sketching system for rapidly authoring concepts of articulated objects for the early stages of design, when designers make such decisions.

55, TITLE: Dynamic optimal space partitioning for redirected walking in multi-user environment
https://dl.acm.org/doi/abs/10.1145/3528223.3530113
AUTHORS: Sang-Bin Jeon, Soon-Uk Kwon, June-Young Hwang, Yong-Hun Cho, Hayeon Kim, Jinhyung Park, In-Kwon Lee
HIGHLIGHT: While this approach has the advantage of precluding any collisions between users, the conventional space subdivision method suffers from frequent boundary resets due to the reduction of available space per user. To address this challenge, in this study, we propose a space subdivision method called Optimal Space Partitioning (OSP) that dynamically divides the shared physical space in real-time.

56, TITLE: Interactive augmented reality storytelling guided by scene semantics
https://dl.acm.org/doi/abs/10.1145/3528223.3530061
AUTHORS: Changyang Li, Wanwan Li, Haikun Huang, Lap-Fai Yu

HIGHLIGHT: We present a novel interactive augmented reality (AR) storytelling approach guided by indoor scene semantics.

57, TITLE: WallPlan: synthesizing floorplans by learning to generate wall graphs
https://dl.acm.org/doi/abs/10.1145/3528223.3530135
AUTHORS: Jiahui Sun, Wenming Wu, Ligang Liu, Wenjie Min, Gaofeng Zhang, Liping Zheng
HIGHLIGHT: In this paper, we propose a novel wall-oriented method, called WallPlan, for automatically and efficiently generating plausible floorplans from various design constraints.

58, TITLE: Free2CAD: parsing freehand drawings into CAD commands
https://dl.acm.org/doi/abs/10.1145/3528223.3530133
AUTHORS: Changjian Li, Hao Pan, Adrien Bousseau, Niloy J. Mitra
HIGHLIGHT: First, the user must be able to mentally parse a final shape into a valid sequence of supported CAD commands; and second, the user must be sufficiently conversant with CAD software packages to be able to execute the corresponding CAD commands. As a step towards addressing both these challenges, we present Free2CAD wherein the user can simply sketch the final shape and our system parses the input strokes into a sequence of commands expressed in a simplified CAD language.

59, TITLE: ASE: large-scale reusable adversarial skill embeddings for physically simulated characters
https://dl.acm.org/doi/abs/10.1145/3528223.3530110
AUTHORS: Xue Bin Peng, Yunrong Guo, Lina Halper, Sergey Levine, Sanja Fidler
HIGHLIGHT: In this work, we present a large-scale data-driven framework for learning versatile and reusable skill embeddings for physically simulated characters.

60, TITLE: Learning to use chopsticks in diverse gripping styles
https://dl.acm.org/doi/abs/10.1145/3528223.3530057
AUTHORS: Zeshi Yang, Kangkang Yin, Libin Liu
HIGHLIGHT: In this paper, we focus on chopsticks-based object relocation tasks, which are common yet demanding.

61, TITLE: Physics-based character controllers using conditional VAEs
https://dl.acm.org/doi/abs/10.1145/3528223.3530067
AUTHORS: Jungdam Won, Deepak Gopinath, Jessica Hodgins
HIGHLIGHT: High-quality motion capture datasets are now publicly available, and researchers have used them to create kinematics-based controllers that can generate plausible and diverse human motions without conditioning on specific goals (i.e., a task-agnostic generative model). In this paper, we present an algorithm to build such controllers for physically simulated characters having many degrees of freedom.

62, TITLE: Learning high-DOF reaching-and-grasping via dynamic representation of gripper-object interaction
https://dl.acm.org/doi/abs/10.1145/3528223.3530091
AUTHORS: Qijin She, Ruizhen Hu, Juzhan Xu, Min Liu, Kai Xu, Hui Huang
HIGHLIGHT: To resolve the sample efficiency issue in learning the high-dimensional and complex control of dexterous grasping, we propose an effective representation of grasping state characterizing the spatial interaction between the gripper and the target object.

63, TITLE: Scalable neural indoor scene rendering
https://dl.acm.org/doi/abs/10.1145/3528223.3530153
AUTHORS: Xiuchao Wu, Jiamin Xu, Zihan Zhu, Hujun Bao, Qixing Huang, James Tompkin, Weiwei Xu
HIGHLIGHT: We propose a scalable neural scene reconstruction and rendering method to support distributed training and interactive rendering of large indoor scenes.

64, TITLE: ADOP: approximate differentiable one-pixel point rendering
https://dl.acm.org/doi/abs/10.1145/3528223.3530122
AUTHORS: Darius Rückert, Linus Franke, Marc Stamminger
HIGHLIGHT: In this paper we present ADOP, a novel point-based, differentiable neural rendering pipeline.

65, TITLE: Egocentric scene reconstruction from an omnidirectional video
https://dl.acm.org/doi/abs/10.1145/3528223.3530074
AUTHORS: Hyeonjoong Jang, Andréas Meuleman, Dahyun Kang, Donggun Kim, Christian Richardt, Min H. Kim
HIGHLIGHT: In this work, we propose an egocentric 3D reconstruction method that can acquire scene geometry with high accuracy from a short egocentric omnidirectional video.

66, TITLE: Neural rendering in a room: amodal 3D understanding and free-viewpoint rendering for the closed scene composed of pre-captured objects
https://dl.acm.org/doi/abs/10.1145/3528223.3530163
AUTHORS: Bangbang Yang, Yinda Zhang, Yijin Li, Zhaopeng Cui, Sean Fanello, Hujun Bao, Guofeng Zhang
HIGHLIGHT: We, as human beings, can understand and picture a familiar scene from arbitrary viewpoints given a single image, whereas this is still a grand challenge for computers. We hereby present a novel solution to mimic such human perception capability based on a new paradigm of amodal 3D scene understanding with neural rendering for a closed scene.

67, TITLE: Instant neural graphics primitives with a multiresolution hash encoding
https://dl.acm.org/doi/abs/10.1145/3528223.3530127
AUTHORS: Thomas Müller, Alex Evans, Christoph Schied, Alexander Keller

HIGHLIGHT: Neural graphics primitives, parameterized by fully connected neural networks, can be costly to train and evaluate. We reduce this cost with a versatile new input encoding that permits the use of a smaller network without sacrificing quality, thus significantly reducing the number of floating point and memory access operations: a small neural network is augmented by a multiresolution hash table of trainable feature vectors whose values are optimized through stochastic gradient descent.

68, TITLE: Dual octree graph networks for learning adaptive volumetric shape representations
https://dl.acm.org/doi/abs/10.1145/3528223.3530087
AUTHORS: Peng-Shuai Wang, Yang Liu, Xin Tong
HIGHLIGHT: We present an adaptive deep representation of volumetric fields of 3D shapes and an efficient approach to learn this deep representation for high-quality 3D shape reconstruction and auto-encoding.

69, TITLE: Neural dual contouring
https://dl.acm.org/doi/abs/10.1145/3528223.3530108
AUTHORS: Zhiqin Chen, Andrea Tagliasacchi, Thomas Funkhouser, Hao Zhang
HIGHLIGHT: We introduce neural dual contouring (NDC), a new data-driven approach to mesh reconstruction based on dual contouring (DC).

70, TITLE: DeltaConv: anisotropic operators for geometric deep learning on point clouds
https://dl.acm.org/doi/abs/10.1145/3528223.3530166
AUTHORS: Ruben Wiersma, Ahmad Nasikun, Elmar Eisemann, Klaus Hildebrandt
HIGHLIGHT: In this paper, we aim to construct anisotropic convolution layers that work directly on the surface derived from a point cloud.

71, TITLE: SPAGHETTI: editing implicit shapes through part aware generation
https://dl.acm.org/doi/abs/10.1145/3528223.3530084
AUTHORS: Amir Hertz, Or Perel, Raja Giryes, Olga Sorkine-Hornung, Daniel Cohen-Or
HIGHLIGHT: We introduce a method for Editing Implicit Shapes Through Part Aware GeneraTion, permuted in short as SPAGHETTI.

72, TITLE: Spelunking the deep: guaranteed queries on general neural implicit surfaces via range analysis
https://dl.acm.org/doi/abs/10.1145/3528223.3530155
AUTHORS: Nicholas Sharp, Alec Jacobson
HIGHLIGHT: Instead, this work presents a new approach to perform queries directly on general neural implicit functions for a wide range of existing architectures.

73, TITLE: DEF: deep estimation of sharp geometric features in 3D shapes
https://dl.acm.org/doi/abs/10.1145/3528223.3530140
AUTHORS: Albert Matveev, Ruslan Rakhimov, Alexey Artemov, Gleb Bobrovskikh, Vage Egiazarian, Emil Bogomolov, Daniele Panozzo, Denis Zorin, Evgeny Burnaev
HIGHLIGHT: We propose Deep Estimators of Features (DEFs), a learning-based framework for predicting sharp geometric features in sampled 3D shapes.

74, TITLE: Neural jacobian fields: learning intrinsic mappings of arbitrary meshes
https://dl.acm.org/doi/abs/10.1145/3528223.3530141
AUTHORS: Noam Aigerman, Kunal Gupta, Vladimir G. Kim, Siddhartha Chaudhuri, Jun Saito, Thibault Groueix
HIGHLIGHT: This paper introduces a framework designed to accurately predict piecewise linear mappings of arbitrary meshes via a neural network, enabling training and evaluating over heterogeneous collections of meshes that do not share a triangulation, as well as producing highly detail-preserving maps whose accuracy exceeds current state of the art.

75, TITLE: Joint neural phase retrieval and compression for energy- and computation-efficient holography on the edge
https://dl.acm.org/doi/abs/10.1145/3528223.3530070
AUTHORS: Yujie Wang, Praneeth Chakravarthula, Qi Sun, Baoquan Chen
HIGHLIGHT: In this work, by distributing the computation and optimizing the transmission, we propose the first framework that jointly generates and compresses high-quality phase-only holograms.

76, TITLE: Accommodative holography: improving accommodation response for perceptually realistic holographic displays
https://dl.acm.org/doi/abs/10.1145/3528223.3530147
AUTHORS: Dongyeon Kim, Seung-Woo Nam, Byounghyo Lee, Jong-Mo Seo, Byoungho Lee
HIGHLIGHT: However, these holograms show a high energy concentration in a limited angular spectrum, whereas the holograms with uniformly distributed angular spectrum suffer from a severe speckle noise in the reconstructed images. In this study, we claim that these two physical phenomena attributed to the existing CGHs significantly limit the support of accommodation cues, which is known as one of the biggest advantages of holographic displays.

77, TITLE: Closed-loop control of direct ink writing via reinforcement learning
https://dl.acm.org/doi/abs/10.1145/3528223.3530144
AUTHORS: Michal Piovar?i, Michael Foshey, Jie Xu, Timmothy Erps, Vahid Babaei, Piotr Didyk, Szymon Rusinkiewicz, Wojciech Matusik, Bernd Bickel
HIGHLIGHT: In this work, we demonstrate the feasibility of learning a closed-loop control policy for additive manufacturing using reinforcement learning.

78, TITLE: Covector fluids
https://dl.acm.org/doi/abs/10.1145/3528223.3530120
AUTHORS: Mohammad Sina Nabizadeh, Stephanie Wang, Ravi Ramamoorthi, Albert Chern
HIGHLIGHT: We propose a new velocity-based fluid solver derived from a reformulated Euler equation using covectors.

79, TITLE: Efficient kinetic simulation of two-phase flows
https://dl.acm.org/doi/abs/10.1145/3528223.3530132
AUTHORS: Wei Li, Yihui Ma, Xiaopei Liu, Mathieu Desbrun
HIGHLIGHT: Recently, kinetic-based methods have achieved success in simulating large density ratios and high Reynolds numbers efficiently; but their memory overhead, limited stability, and numerically-intensive treatment of coupling with immersed solids remain enduring obstacles to their adoption in movie productions. In this paper, we propose a new kinetic solver to couple the incompressible Navier-Stokes equations with a conservative phase-field equation which remedies these major practical hurdles.

80, TITLE: VEMPIC: particle-in-polyhedron fluid simulation for intricate solid boundaries
https://dl.acm.org/doi/abs/10.1145/3528223.3530138
AUTHORS: Michael Tao, Christopher Batty, Mirela Ben-Chen, Eugene Fiume, David I. W. Levin
HIGHLIGHT: We present a novel cut-cell fluid simulation framework that exactly represents boundary geometry during the simulation.

81, TITLE: A clebsch method for free-surface vortical flow simulation
https://dl.acm.org/doi/abs/10.1145/3528223.3530150
AUTHORS: Shiying Xiong, Zhecheng Wang, Mengdi Wang, Bo Zhu
HIGHLIGHT: We propose a novel Clebsch method to simulate the free-surface vortical flow.

82, TITLE: Guided bubbles and wet foam for realistic whitewater simulation
https://dl.acm.org/doi/abs/10.1145/3528223.3530059
AUTHORS: Joel Wretborn, Sean Flynn, Alexey Stomakhin
HIGHLIGHT: We present a method for enhancing fluid simulations with realistic bubble and foam detail.

83, TITLE: The power particle-in-cell method
https://dl.acm.org/doi/abs/10.1145/3528223.3530066
AUTHORS: Ziyin Qu, Minchen Li, Fernando De Goes, Chenfanfu Jiang
HIGHLIGHT: This paper introduces a new weighting scheme for particle-grid transfers that generates hybrid Lagrangian/Eulerian fluid simulations with uniform particle distributions and precise volume control.

84, TITLE: Physics informed neural fields for smoke reconstruction with sparse data
https://dl.acm.org/doi/abs/10.1145/3528223.3530169
AUTHORS: Mengyu Chu, Lingjie Liu, Quan Zheng, Erik Franz, Hans-Peter Seidel, Christian Theobalt, Rhaleb Zayer
HIGHLIGHT: We present the first method to reconstruct dynamic fluid phenomena by leveraging the governing physics (ie, Navier -Stokes equations) in an end-to-end optimization from a mere set of sparse video frames without taking lighting conditions, geometry information, or boundary conditions as input.

85, TITLE: NIMBLE: a non-rigid hand model with bones and muscles
https://dl.acm.org/doi/abs/10.1145/3528223.3530079
AUTHORS: Yuwei Li, Longwen Zhang, Zesong Qiu, Yingwenqi Jiang, Nianyi Li, Yuexin Ma, Yuyao Zhang, Lan Xu, Jingyi Yu
HIGHLIGHT: In this paper, we present NIMBLE, a novel parametric hand model that includes the missing key components, bringing 3D hand model to a new level of realism.

86, TITLE: NeuralSound: learning-based modal sound synthesis with acoustic transfer
https://dl.acm.org/doi/abs/10.1145/3528223.3530184
AUTHORS: Xutong Jin, Sheng Li, Guoping Wang, Dinesh Manocha
HIGHLIGHT: We present a novel learning-based modal sound synthesis approach that includes a mixed vibration solver for modal analysis and a radiation network for acoustic transfer.

87, TITLE: Implicit neural representation for physics-driven actuated soft bodies
https://dl.acm.org/doi/abs/10.1145/3528223.3530156
AUTHORS: Lingchen Yang, Byungsoo Kim, Gaspard Zoss, Baran Gözcü, Markus Gross, Barbara Solenthaler
HIGHLIGHT: Our key contribution is a general and implicit formulation to control active soft bodies by defining a function that enables a continuous mapping from a spatial point in the material space to the actuation value.

88, TITLE: Efficient estimation of boundary integrals for path-space differentiable rendering
https://dl.acm.org/doi/abs/10.1145/3528223.3530080
AUTHORS: Kai Yan, Christoph Lassner, Brian Budge, Zhao Dong, Shuang Zhao
HIGHLIGHT: In this paper, we introduce a new technique to efficiently estimate boundary path integrals.

89, TITLE: DR.JIT: a just-in-time compiler for differentiable rendering
https://dl.acm.org/doi/abs/10.1145/3528223.3530099
AUTHORS: Wenzel Jakob, Sébastien Speierer, Nicolas Roussel, Delio Vicini

HIGHLIGHT: DR.JIT is a new just-in-time compiler for physically based rendering and its derivative.

90, TITLE: Differentiable signed distance function rendering
https://dl.acm.org/doi/abs/10.1145/3528223.3530139
AUTHORS: Delio Vicini, Sébastien Speierer, Wenzel Jakob
HIGHLIGHT: In this article, we show how to extend the commonly used sphere tracing algorithm so that it additionally outputs a reparameterization that provides the means to compute accurate shape parameter derivatives.

91, TITLE: Adjoint nonlinear ray tracing
https://dl.acm.org/doi/abs/10.1145/3528223.3530077
AUTHORS: Arjun Teh, Matthew O'Toole, Ioannis Gkioulekas
HIGHLIGHT: We present a method for optimizing refractive index fields that both accounts for curved light paths and has a small, constant memory footprint.

92, TITLE: Alpha wrapping with an offset
https://dl.acm.org/doi/abs/10.1145/3528223.3530152
AUTHORS: Cédric Portaneri, Mael Rouxel-Labbé, Michael Hemmer, David Cohen-Steiner, Pierre Alliez
HIGHLIGHT: Given an input 3D geometry such as a triangle soup or a point set, we address the problem of generating a watertight and orientable surface triangle mesh that strictly encloses the input.

93, TITLE: Iterative poisson surface reconstruction (iPSR) for unoriented points
https://dl.acm.org/doi/abs/10.1145/3528223.3530096
AUTHORS: Fei Hou, Chiyu Wang, Wencheng Wang, Hong Qin, Chen Qian, Ying He
HIGHLIGHT: This paper intends to validate that an improved PSR, called iPSR, can completely eliminate the requirement of point normals and proceed in an iterative manner.

94, TITLE: ComplexGen: CAD reconstruction by B-rep chain complex generation
https://dl.acm.org/doi/abs/10.1145/3528223.3530078
AUTHORS: Haoxiang Guo, Shilin Liu, Hao Pan, Yang Liu, Xin Tong, Baining Guo
HIGHLIGHT: We solve the complex generation problem in two steps. First, we propose a novel neural framework that consists of a sparse CNN encoder for input point cloud processing and a tri-path transformer decoder for generating geometric primitives and their mutual relationships with estimated probabilities. Second, given the probabilistic structure predicted by the neural network, we recover a definite B-Rep chain complex by solving a global optimization maximizing the likelihood under structural validness constraints and applying geometric refinements.

95, TITLE: Moving level-of-detail surfaces
https://dl.acm.org/doi/abs/10.1145/3528223.3530151
AUTHORS: Corentin Mercier, Thibault Lescoat, Pierre Roussillon, Tamy Boubekeur, Jean-Marc Thiery
HIGHLIGHT: We present a simple, fast, and smooth scheme to approximate Algebraic Point Set Surfaces using non-compact kernels, which is particularly suited for filtering and reconstructing point sets presenting large missing parts.

96, TITLE: Photo-to-shape material transfer for diverse structures
https://dl.acm.org/doi/abs/10.1145/3528223.3530088
AUTHORS: Ruizhen Hu, Xiangyu Su, Xiangkai Chen, Oliver Van Kaick, Hui Huang
HIGHLIGHT: We introduce a method for assigning photorealistic relightable materials to 3D shapes in an automatic manner.

97, TITLE: Towards practical physical-optics rendering
https://dl.acm.org/doi/abs/10.1145/3528223.3530119
AUTHORS: Shlomi Steinberg, Pradeep Sen, Ling-Qi Yan
HIGHLIGHT: However, the recent works that have proposed PLT are too expensive to apply to real-world scenes with complex geometry and materials. To address this problem, we propose a novel framework for physical light transport based on several key ideas that actually makes PLT practical for complex scenes.

98, TITLE: Sparse ellipsometry: portable acquisition of polarimetric SVBRDF and shape with unstructured flash photography
https://dl.acm.org/doi/abs/10.1145/3528223.3530075
AUTHORS: Inseung Hwang, Daniel S. Jeon, Adolfo Muñoz, Diego Gutierrez, Xin Tong, Min H. Kim
HIGHLIGHT: We present sparse ellipsometry, a portable polarimetric acquisition method that captures both polarimetric SVBRDF and 3D shape simultaneously.

99, TITLE: Position-free multiple-bounce computations for smith microfacet BSDFs
https://dl.acm.org/doi/abs/10.1145/3528223.3530112
AUTHORS: Beibei Wang, Wenhua Jin, Jiahui Fan, Jian Yang, Nicolas Holzschuch, Ling-Qi Yan
HIGHLIGHT: The original model ignores multiple bounces on the microgeometry, resulting in an energy loss, especially for rough materials. In this paper, we present a new method to compute the multiple bounces inside the microgeometry, eliminating this energy loss.

100, TITLE: A?: autodiff for discontinuous programs - applied to shaders
https://dl.acm.org/doi/abs/10.1145/3528223.3530125
AUTHORS: Yuting Yang, Connelly Barnes, Andrew Adams, Adam Finkelstein

HIGHLIGHT: This paper describes a compiler-based approach to extend reverse mode AD so as to accept arbitrary programs involving discontinuities.

101, TITLE: DeepPhase: periodic autoencoders for learning motion phase manifolds
https://dl.acm.org/doi/abs/10.1145/3528223.3530178
AUTHORS: Sebastian Starke, Ian Mason, Taku Komura
HIGHLIGHT: In this work, we propose a novel neural network architecture called the Periodic Autoencoder that can learn periodic features from large unstructured motion datasets in an unsupervised manner.

102, TITLE: Real-time controllable motion transition for characters
https://dl.acm.org/doi/abs/10.1145/3528223.3530090
AUTHORS: Xiangjun Tang, He Wang, Bo Hu, Xu Gong, Ruifan Yi, Qilong Kou, Xiaogang Jin
HIGHLIGHT: Its core challenge lies in the need to satisfy three critical conditions simultaneously: quality, controllability and speed, which renders any methods that need offline computation (or post-processing) or cannot incorporate (often unpredictable) user control undesirable. To this end, we propose a new real-time transition method to address the aforementioned challenges.

103, TITLE: GANimator: neural motion synthesis from a single sequence
https://dl.acm.org/doi/abs/10.1145/3528223.3530157
AUTHORS: Peizhuo Li, Kfir Aberman, Zihan Zhang, Rana Hanocka, Olga Sorkine-Hornung
HIGHLIGHT: We present GANimator, a generative model that learns to synthesize novel motions from a single, short motion sequence.

104, TITLE: Character articulation through profile curves
https://dl.acm.org/doi/abs/10.1145/3528223.3530060
AUTHORS: Fernando De Goes, William Sheffler, Kurt Fleischer
HIGHLIGHT: This paper presents a new approach for character articulation that produces detail-preserving deformations fully controlled by 3D curves that profile the deforming surface.

105, TITLE: DCT-net: domain-calibrated translation for portrait stylization
https://dl.acm.org/doi/abs/10.1145/3528223.3530159
AUTHORS: Yifang Men, Yuan Yao, Miaomiao Cui, Zhouhui Lian, Xuansong Xie
HIGHLIGHT: This paper introduces DCT-Net, a novel image translation architecture for few-shot portrait stylization.

106, TITLE: StyleGAN-NADA: CLIP-guided domain adaptation of image generators
https://dl.acm.org/doi/abs/10.1145/3528223.3530164
AUTHORS: Rinon Gal, Or Patashnik, Haggai Maron, Amit H. Bermano, Gal Chechik, Daniel Cohen-Or
HIGHLIGHT: Leveraging the semantic power of large scale Contrastive-Language-Image-Pre-training (CLIP) models, we present a text-driven method that allows shifting a generative model to new domains, without having to collect even a single image.

107, TITLE: SNeRF: stylized neural implicit representations for 3D scenes
https://dl.acm.org/doi/abs/10.1145/3528223.3530107
AUTHORS: Thu Nguyen-Phuoc, Feng Liu, Lei Xiao
HIGHLIGHT: This paper presents a stylized novel view synthesis method.

108, TITLE: Noise-based enhancement for foveated rendering
https://dl.acm.org/doi/abs/10.1145/3528223.3530101
AUTHORS: Taimoor Tariq, Cara Tursun, Piotr Didyk
HIGHLIGHT: Our main contribution is a perceptually-inspired technique for deriving the parameters of the noise required for the enhancement and its calibration.

109, TITLE: Image features influence reaction time: a learned probabilistic perceptual model for saccade latency
https://dl.acm.org/doi/abs/10.1145/3528223.3530055
AUTHORS: Budmonde Duinkharjav, Praneeth Chakravarthula, Rachel Brown, Anjul Patney, Qi Sun
HIGHLIGHT: We aim to ask and answer an essential question "how quickly do we react after observing a displayed visual target?"

110, TITLE: stelaCSF: a unified model of contrast sensitivity as the function of spatio-temporal frequency, eccentricity, luminance and area
https://dl.acm.org/doi/abs/10.1145/3528223.3530115
AUTHORS: Rafa? K. Mantiuk, Maliha Ashraf, Alexandre Chapiro
HIGHLIGHT: In this paper, we propose a unified CSF, stelaCSF, which accounts for all major dimensions of the stimulus: spatial and temporal frequency, eccentricity, luminance, and area.

111, TITLE: Dark stereo: improving depth perception under low luminance
https://dl.acm.org/doi/abs/10.1145/3528223.3530136
AUTHORS: Krzysztof Wolski, Fangcheng Zhong, Karol Myszkowski, Rafa? K. Mantiuk
HIGHLIGHT: In this paper, we propose a model of stereo constancy that predicts the precision of binocular depth cues for a given contrast and luminance.

112, TITLE: Perception of letter glyph parameters for InfoTypography

https://dl.acm.org/doi/abs/10.1145/3528223.3530111
AUTHORS: Johannes Lang, Miguel A. Nacenta
HIGHLIGHT: We provide an empirical characterization of seven typographical parameters of Latin fonts in terms of absolute perception and just noticeable differences (JNDs) to help visualization designers to choose typographic parameters for visualizations that contain text, as well as support typographers and type designers when selecting which levels of these parameters to implement to achieve differentiability between normal text, emphasized text and different headings.

113, TITLE: Face deblurring using dual camera fusion on mobile phones
https://dl.acm.org/doi/abs/10.1145/3528223.3530131
AUTHORS: Wei-Sheng Lai, Yichang Shih, Lun-Cheng Chu, Xiaotong Wu, Sung-Fang Tsai, Michael Krainin, Deqing Sun, Chia-Kai Liang
HIGHLIGHT: To this end, we develop a novel face deblurring system based on the dual camera fusion technique for mobile phones.

114, TITLE: Computational design of passive grippers
https://dl.acm.org/doi/abs/10.1145/3528223.3530162
AUTHORS: Milin Kodnongbua, Ian Good, Yu Lou, Jeffrey Lipton, Adriana Schulz
HIGHLIGHT: This work proposes a novel generative design tool for passive grippers---robot end effectors that have no additional actuation and instead leverage the existing degrees of freedom in a robotic arm to perform grasping tasks.

115, TITLE: Computational design of high-level interlocking puzzles
https://dl.acm.org/doi/abs/10.1145/3528223.3530071
AUTHORS: Rulin Chen, Ziqi Wang, Peng Song, Bernd Bickel
HIGHLIGHT: In this paper, we present a computational approach to design high-level interlocking puzzles.

116, TITLE: Mixed integer neural inverse design
https://dl.acm.org/doi/abs/10.1145/3528223.3530083
AUTHORS: Navid Ansari, Hans-Peter Seidel, Vahid Babaei
HIGHLIGHT: Here, we show that the piecewise linear property, very common in everyday neural networks, allows for an inverse design formulation based on mixed-integer linear programming.

117, TITLE: Umbrella meshes: elastic mechanisms for freeform shape deployment
https://dl.acm.org/doi/abs/10.1145/3528223.3530089
AUTHORS: Yingying Ren, Uday Kusupati, Julian Panetta, Florin Isvoranu, Davide Pellis, Tian Chen, Mark Pauly
HIGHLIGHT: We present a computational inverse design framework for a new class of volumetric deployable structures that have compact rest states and deploy into bending-active 3D target surfaces.

118, TITLE: Filament based plasma
https://dl.acm.org/doi/abs/10.1145/3528223.3530102
AUTHORS: Marcel Padilla, Oliver Gross, Felix Knöppel, Albert Chern, Ulrich Pinkall, Peter Schröder
HIGHLIGHT: We demonstrate the fidelity of our method by comparing the resulting renderings with actual images of our sun's corona.

119, TITLE: A moving eulerian-lagrangian particle method for thin film and foam simulation
https://dl.acm.org/doi/abs/10.1145/3528223.3530174
AUTHORS: Yitong Deng, Mengdi Wang, Xiangxin Kong, Shiying Xiong, Zangyueyang Xian, Bo Zhu
HIGHLIGHT: We present the Moving Eulerian-Lagrangian Particles (MELP), a novel mesh-free method for simulating incompressible fluid on thin films and foams.

120, TITLE: Ecoclimates: climate-response modeling of vegetation
https://dl.acm.org/doi/abs/10.1145/3528223.3530146
AUTHORS: Wojtek Pa?ubicki, Mi?osz Makowski, Weronika Gajda, Torsten Hädrich, Dominik L. Michels, Sören Pirk
HIGHLIGHT: In this work we take steps towards simulating ecoclimates by modeling the feedback loops between vegetation, soil, and atmosphere.

121, TITLE: Unified many-worlds browsing of arbitrary physics-based animations
https://dl.acm.org/doi/abs/10.1145/3528223.3530082
AUTHORS: Purvi Goel, Doug L. James
HIGHLIGHT: In this paper, we propose Unified Many-Worlds Browsing (UMWB), a practical method for sample-level control and exploration of physics-based animations.

122, TITLE: Computational pattern making from 3D garment models
https://dl.acm.org/doi/abs/10.1145/3528223.3530145
AUTHORS: Nico Pietroni, Corentin Dumery, Raphael Falque, Mark Liu, Teresa Vidal-Calleja, Olga Sorkine-Hornung
HIGHLIGHT: We propose a method for computing a sewing pattern of a given 3D garment model.

123, TITLE: NeuralTailor: reconstructing sewing pattern structures from 3D point clouds of garments
https://dl.acm.org/doi/abs/10.1145/3528223.3530179
AUTHORS: Maria Korosteleva, Sung-Hee Lee

HIGHLIGHT: We propose to use a garment sewing pattern, a realistic and compact garment descriptor, to facilitate the intrinsic garment shape estimation.

124, TITLE: Clustered vector textures
https://dl.acm.org/doi/abs/10.1145/3528223.3530062
AUTHORS: Peihan Tu, Li-Yi Wei, Matthias Zwicker
HIGHLIGHT: This paper proposes an algorithm for generating vector patterns with diverse shapes and structured local interactions via a sample-based representation.

125, TITLE: As-locally-uniform-as-possible reshaping of vector clip-art
https://dl.acm.org/doi/abs/10.1145/3528223.3530098
AUTHORS: Chrystiano Araújo, Nicholas Vining, Enrique Rosales, Giorgio Gori, Alla Sheffer
HIGHLIGHT: We propose a targeted As-Locally-Uniform-as-Possible (ALUP) vector clip-art reshaping method that satisfies the properties above.

126, TITLE: AvatarCLIP: zero-shot text-driven generation and animation of 3D avatars
https://dl.acm.org/doi/abs/10.1145/3528223.3530094
AUTHORS: Fangzhou Hong, Mingyuan Zhang, Liang Pan, Zhongang Cai, Lei Yang, Ziwei Liu
HIGHLIGHT: However, the whole production process is prohibitively time-consuming and labor-intensive. To democratize this technology to a larger audience, we propose AvatarCLIP, a zero-shot text-driven framework for 3D avatar generation and animation.

127, TITLE: Text2Human: text-driven controllable human image generation
https://dl.acm.org/doi/abs/10.1145/3528223.3530104
AUTHORS: Yuming Jiang, Shuai Yang, Haonan Qju, Wayne Wu, Chen Change Loy, Ziwei Liu
HIGHLIGHT: In this work, we present a text-driven controllable framework, Text2Human, for a high-quality and diverse human generation.

128, TITLE: Authentic volumetric avatars from a phone scan
https://dl.acm.org/doi/abs/10.1145/3528223.3530143
AUTHORS: Chen Cao, Tomas Simon, Jin Kyu Kim, Gabe Schwartz, Michael Zollhoefer, Shun-Suke Saito, Stephen Lombardi, Shih-En Wei, Danielle Belko, Shoou-I Yu, Yaser Sheikh, Jason Saragih
HIGHLIGHT: Creating photorealistic avatars of existing people currently requires extensive person-specific data capture, which is usually only accessible to the VFX industry and not the general public. Our work aims to address this drawback by relying only on a short mobile phone capture to obtain a drivable 3D head avatar that matches a person's likeness faithfully.

129, TITLE: Artemis: articulated neural pets with appearance and motion synthesis
https://dl.acm.org/doi/abs/10.1145/3528223.3530086
AUTHORS: Haimin Luo, Teng Xu, Yuheng Jiang, Chenglin Zhou, Qiwei Qiu, Yingliang Zhang, Wei Yang, Lan Xu, Jingyi Yu
HIGHLIGHT: In this paper, we present ARTEMIS, a novel neural modeling and rendering pipeline for generating ARTiculated neural pets with appEarance and Motion synthesIS.

130, TITLE: Facial hair tracking for high fidelity performance capture
https://dl.acm.org/doi/abs/10.1145/3528223.3530116
AUTHORS: Sebastian Winberg, Gaspard Zoss, Prashanth Chandran, Paulo Gotardo, Derek Bradley
HIGHLIGHT: In this paper, we propose the first multiview reconstruction pipeline that tracks both the dense 3D facial hair, as well as the underlying 3D skin for entire performances.

131, TITLE: EyeNeRF: a hybrid representation for photorealistic synthesis, animation and relighting of human eyes
https://dl.acm.org/doi/abs/10.1145/3528223.3530130
AUTHORS: Gengyan Li, Abhimitra Meka, Franziska Mueller, Marcel C. Buehler, Otmar Hilliges, Thabo Beeler
HIGHLIGHT: We present a novel geometry and appearance representation that enables high-fidelity capture and photorealistic animation, view synthesis and relighting of the eye region using only a sparse set of lights and cameras.

132, TITLE: DeepFaceVideoEditing: sketch-based deep editing of face videos
https://dl.acm.org/doi/abs/10.1145/3528223.3530056
AUTHORS: Feng-Lin Liu, Shu-Yu Chen, Yu-Kun Lai, Chunpeng Li, Yue-Ren Jiang, Hongbo Fu, Lin Gao
HIGHLIGHT: However, it is nontrivial to extend such methods to video editing due to various challenges, ranging from appropriate manipulation propagation and fusion of multiple editing operations to ensure temporal coherence and visual quality. To address these issues, we propose a novel sketch-based facial video editing framework, in which we represent editing manipulations in latent space and propose specific propagation and fusion modules to generate high-quality video editing results based on StyleGAN3.

133, TITLE: Local anatomically-constrained facial performance retargeting
https://dl.acm.org/doi/abs/10.1145/3528223.3530114
AUTHORS: Prashanth Chandran, Loïc Ciccone, Markus Gross, Derek Bradley
HIGHLIGHT: We present a new method for high-fidelity offline facial performance retargeting that is neither expensive nor artifact-prone.

134, TITLE: Comparison of single image HDR reconstruction methods â€" the caveats of quality assessment

https://dl.acm.org/doi/abs/10.1145/3528233.3530729
AUTHORS: Param Hanji, Rafal Mantiuk, Gabriel Eilertsen, Saghi Hajisharif, Jonas Unger
HIGHLIGHT: In this work, we compared six recent single image HDR reconstruction (SI-HDR) methods in a subjective image quality experiment on an HDR display.

135, TITLE: Unsupervised Kinematic Motion Detection for Part-segmented 3D Shape Collections
https://dl.acm.org/doi/abs/10.1145/3528233.3530742
AUTHORS: Xianghao Xu, Yifan Ruan, Srinath Sridhar, Daniel Ritchie
HIGHLIGHT: In this paper, we present an unsupervised approach for discovering articulated motions in a part-segmented 3D shape collection.

136, TITLE: Low-poly Mesh Generation for Building Models
https://dl.acm.org/doi/abs/10.1145/3528233.3530716
AUTHORS: Xifeng Gao, Kui Wu, Zherong Pan
HIGHLIGHT: This can take hours and involve tedious trial and error. We propose a novel and simple algorithm to automate this process by converting high-poly 3D building models into both simple and visually preserving low-poly meshes.

137, TITLE: Neural Layered BRDFs
https://dl.acm.org/doi/abs/10.1145/3528233.3530732
AUTHORS: Jiahui Fan, Beibei Wang, Milos Hasan, Jian Yang, Ling-Qi Yan
HIGHLIGHT: In this paper, we propose to perform layering in the neural space, by compressing BRDFs into latent codes via a proposed representation neural network, and performing a learned layering operation on these latent vectors via a layering network.

138, TITLE: Node Graph Optimization Using Differentiable Proxies
https://dl.acm.org/doi/abs/10.1145/3528233.3530733
AUTHORS: Yiwei Hu, Paul Guerrero, Milos Hasan, Holly Rushmeier, Valentin Deschaintre
HIGHLIGHT: In this paper, we propose a fully differentiable framework which enables end-to-end gradient-based optimization of material graphs, even if some functions of the graph are non-differentiable.

139, TITLE: Go Green: General Regularized Greenâ€™s Functions for Elasticity
https://dl.acm.org/doi/abs/10.1145/3528233.3530726
AUTHORS: Jiong Chen, Mathieu Desbrun
HIGHLIGHT: For instance, the recent work of de Goes and James [2017] leveraged these Greenâ€™s functions to formulate sculpting tools capturing in real-time broad and physically-plausible deformations more intuitively and realistically than traditional editing brushes. In this paper, we extend this family of Greenâ€™s functions by exploiting the anisotropic behavior of general linear elastic materials, where the relationship between stress and strain in the material depends on its orientation.

140, TITLE: Diffeomorphic Neural Surface Parameterization for 3D and Reflectance Acquisition
https://dl.acm.org/doi/abs/10.1145/3528233.3530741
AUTHORS: Ziang Cheng, Hongdong Li, Richard Hartley, Yinqiang Zheng, Imari Sato
HIGHLIGHT: This paper proposes a simple method which solves the problem of multi-view 3D reconstruction for objects with unknown and generic surface materials, imaged by a freely moving camera and lit by a freely moving point light source.

141, TITLE: Neural Shadow Mapping
https://dl.acm.org/doi/abs/10.1145/3528233.3530700
AUTHORS: Sayantan Datta, Derek Nowrouzezahrai, Christoph Schied, Zhao Dong
HIGHLIGHT: We present a neural extension of basic shadow mapping for fast, high quality hard and soft shadows.

142, TITLE: Rendering Neural Materials on Curved Surfaces
https://dl.acm.org/doi/abs/10.1145/3528233.3530721
AUTHORS: Alexandr Kuznetsov, Xuezheng Wang, Krishna Mullia, Fujun Luan, Zexiang Xu, Milos Hasan, Ravi Ramamoorthi
HIGHLIGHT: However, they still approximate the material on an infinite plane, which prevents them from correctly handling silhouette and parallax effects for viewing directions close to grazing. The goal of this paper is to design a neural material representation capable of correctly handling such silhouette effects.

143, TITLE: Face Extrusion Quad Meshes
https://dl.acm.org/doi/abs/10.1145/3528233.3530754
AUTHORS: Karran Pandey, J. Andreas Bærentzen, Karan Singh
HIGHLIGHT: We propose a 3D object construction methodology built on face-loop modeling operations.

144, TITLE: Predicting Loose-Fitting Garment Deformations Using Bone-Driven Motion Networks
https://dl.acm.org/doi/abs/10.1145/3528233.3530709
AUTHORS: Xiaoyu Pan, Jiaming Mai, Xinwei Jiang, Dongxue Tang, Jingxiang Li, Tianjia Shao, Kun Zhou, Xiaogang Jin, Dinesh Manocha
HIGHLIGHT: We present a learning algorithm that uses bone-driven motion networks to predict the deformation of loose-fitting garment meshes at interactive rates.

145, TITLE: Domain Enhanced Arbitrary Image Style Transfer via Contrastive Learning
https://dl.acm.org/doi/abs/10.1145/3528233.3530736

AUTHORS: Yuxin Zhang, Fan Tang, Weiming Dong, Haibin Huang, Chongyang Ma, Tong-Yee Lee, Changsheng Xu
HIGHLIGHT: In this work, we tackle the challenging problem of arbitrary image style transfer using a novel style feature representation learning method.

146, TITLE: Shoot360: Normal View Video Creation from City Panorama Footage
https://dl.acm.org/doi/abs/10.1145/3528233.3530702
AUTHORS: Anyi Rao, Linning Xu, Dahua Lin
HIGHLIGHT: We present Shoot360, a system that efficiently generates multi-shot normal view videos with desired content presentation and various cinematic styles, given a collection of 360 video recordings on different environments.

147, TITLE: Single-View View Synthesis in the Wild with Learned Adaptive Multiplane Images
https://dl.acm.org/doi/abs/10.1145/3528233.3530755
AUTHORS: Yuxuan Han, Ruicheng Wang, Jiaolong Yang
HIGHLIGHT: We propose a new method based on the multiplane image (MPI) representation.

148, TITLE: Palette: Image-to-Image Diffusion Models
https://dl.acm.org/doi/abs/10.1145/3528233.3530757
AUTHORS: Chitwan Saharia, William Chan, Huiwen Chang, Chris Lee, Jonathan Ho, Tim Salimans, David Fleet, Mohammad Norouzi
HIGHLIGHT: This paper develops a unified framework for image-to-image translation based on conditional diffusion models and evaluates this framework on four challenging image-to-image translation tasks, namely colorization, inpainting, uncropping, and JPEG restoration.

149, TITLE: Self-Conditioned GANs for Image Editing
https://dl.acm.org/doi/abs/10.1145/3528233.3530698
AUTHORS: Yunzhe Liu, Rinon Gal, Amit H. Bermano, Baoquan Chen, Daniel Cohen-Or
HIGHLIGHT: We argue that this bias is responsible not only for fairness concerns, but that it plays a key role in the collapse of latent-traversal editing methods when deviating away from the distributionâ€™s core. Building on this observation, we outline a method for mitigating generative bias through a self-conditioning process, where distances in the latent-space of a pre-trained generator are used to provide initial labels for the data.

150, TITLE: A Theoretical Analysis of Compactness of the Light Transport Operator
https://dl.acm.org/doi/abs/10.1145/3528233.3530725
AUTHORS: Cyril Soler, Ronak Molazem, Kartic Subr
HIGHLIGHT: In this paper we analyze compactness, a key property that is independent of its discretization and which characterizes the ability to approximate the operator uniformly by a sequence of finite rank operators.

151, TITLE: Self-Supervised Post-Correction for Monte Carlo Denoising
https://dl.acm.org/doi/abs/10.1145/3528233.3530730
AUTHORS: Jonghee Back, Binh-Son Hua, Toshiya Hachisuka, Bochang Moon
HIGHLIGHT: A pre-trained network may not properly denoise such an image since it is unseen data from a supervised learning perspective. To address this fundamental issue, we introduce a post-processing network that improves the performance of supervised learning denoisers.

152, TITLE: Symmetry-driven 3D Reconstruction from Concept Sketches
https://dl.acm.org/doi/abs/10.1145/3528233.3530723
AUTHORS: Felix Hähnlein, Yulia Gryaditskaya, Alla Sheffer, Adrien Bousseau
HIGHLIGHT: We present a new symmetry-driven algorithm for recovering designer-intended 3D geometry from concept sketches.

153, TITLE: Stability-Aware Simplification of Curve Networks
https://dl.acm.org/doi/abs/10.1145/3528233.3530711
AUTHORS: William Neveu, Ivan Puhachov, Bernhard Thomaszewski, Mikhail Bessmeltsev
HIGHLIGHT: We present a novel method for fabrication-aware simplification of curve networks, algorithmically selecting a stable subset of given 3D curves.

154, TITLE: Designing Perceptual Puzzles by Differentiating Probabilistic Programs
https://dl.acm.org/doi/abs/10.1145/3528233.3530715
AUTHORS: Kartik Chandra, Tzu-Mao Li, Joshua Tenenbaum, Jonathan Ragan-Kelley
HIGHLIGHT: We design new visual illusions by finding "adversarial examples" for principled models of human perception - specifically, for probabilistic models, which treat vision as Bayesian inference.

155, TITLE: Generative GaitNet
https://dl.acm.org/doi/abs/10.1145/3528233.3530717
AUTHORS: Jungnam Park, Sehee Min, Phil Sik Chang, Jaedong Lee, Moon Seok Park, Jehee Lee
HIGHLIGHT: In this paper, we present Generative GaitNet, which is a novel network architecture based on deep reinforcement learning for controlling a comprehensive, full-body, musculoskeletal model with 304 Hill-type musculotendons.

156, TITLE: Deep Compliant Control
https://dl.acm.org/doi/abs/10.1145/3528233.3530719

AUTHORS: Seunghwan Lee, Phil Sik Chang, Jehee Lee
HIGHLIGHT: This paper aims to build a framework for simulation and control of humanoids that creates physically compliant interactions with surroundings.

157, TITLE: Learning to Brachiate via Simplified Model Imitation
https://dl.acm.org/doi/abs/10.1145/3528233.3530728
AUTHORS: Daniele Reda, Hung Yu Ling, Michiel van de Panne
HIGHLIGHT: It is challenging to control because of the limited control authority, the required advance planning, and the precision of the required grasps. We present a novel approach to this problem using reinforcement learning, and as demonstrated on a finger-less 14-link planar model that learns to brachiate across challenging handhold sequences.

158, TITLE: Learning Soccer Juggling Skills with Layer-wise Mixture-of-Experts
https://dl.acm.org/doi/abs/10.1145/3528233.3530735
AUTHORS: Zhaoming Xie, Sebastian Starke, Hung Yu Ling, Michiel van de Panne
HIGHLIGHT: We present a system to learn control policies for multiple soccer juggling skills, based on deep reinforcement learning. We introduce a task-description framework for these skills which facilitates the specification of individual soccer juggling tasks and the transitions between them.

159, TITLE: Neural 3D Reconstruction in the Wild
https://dl.acm.org/doi/abs/10.1145/3528233.3530718
AUTHORS: Jiaming Sun, Xi Chen, Qianqian Wang, Zhengqi Li, Hadar Averbuch-Elor, Xiaowei Zhou, Noah Snavely
HIGHLIGHT: We introduce a new method that enables efficient and accurate surface reconstruction from Internet photo collections in the presence of varying illumination.

160, TITLE: ReLU Fields: The Little Non-linearity That Could
https://dl.acm.org/doi/abs/10.1145/3528233.3530707
AUTHORS: Animesh Karnewar, Tobias Ritschel, Oliver Wang, Niloy Mitra
HIGHLIGHT: Hence, in this work, we investigate what is the smallest change to grid-based representations that allows for retaining the high fidelity result of MLPs while enabling fast reconstruction and rendering times.

161, TITLE: Random Walks for Adversarial Meshes
https://dl.acm.org/doi/abs/10.1145/3528233.3530710
AUTHORS: Amir Belder, Gal Yefet, Ran Ben-Itzhak, Ayellet Tal
HIGHLIGHT: This paper proposes a novel, unified, and general adversarial attack, which leads to misclassification of several state-of-the-art mesh classification neural networks.

162, TITLE: ImLoveNet: Misaligned Image-supported Registration Network for Low-overlap Point Cloud Pairs
https://dl.acm.org/doi/abs/10.1145/3528233.3530744
AUTHORS: Honghua Chen, Zeyong Wei, Yabin Xu, Mingqiang Wei, Jun Wang
HIGHLIGHT: To answer it, we propose a misaligned image supported registration network for low-overlap point cloud pairs, dubbed ImLoveNet.

163, TITLE: Möbius Convolutions for Spherical CNNs
https://dl.acm.org/doi/abs/10.1145/3528233.3530724
AUTHORS: Thomas W. Mitchel, Noam Aigerman, Vladimir G. Kim, Michael Kazhdan
HIGHLIGHT: Here we present a novel, Möbius-equivariant spherical convolution operator which we call Möbius convolution; with it, we develop the foundations for Möbius-equivariant spherical CNNs.

164, TITLE: Learning Smooth Neural Functions via Lipschitz Regularization
https://dl.acm.org/doi/abs/10.1145/3528233.3530713
AUTHORS: Hsueh-Ti Derek Liu, Francis Williams, Alec Jacobson, Sanja Fidler, Or Litany
HIGHLIGHT: In this work, we introduce a novel regularization designed to encourage smooth latent spaces in neural fields by penalizing the upper bound on the fieldâ€™s Lipschitz constant.

165, TITLE: Time-multiplexed Neural Holography: A Flexible Framework for Holographic Near-eye Displays with Fast Heavily-quantized Spatial Light Modulators
https://dl.acm.org/doi/abs/10.1145/3528233.3530734
AUTHORS: Suyeon Choi, Manu Gopakumar, Yifan Peng, Jonghyun Kim, Matthew O'Toole, Gordon Wetzstein
HIGHLIGHT: The speed of these SLMs offers time multiplexing capabilities, essentially enabling partially-coherent holographic display modes. Here we report advances in camera-calibrated wave propagation models for these types of holographic near-eye displays and we develop a CGH framework that robustly optimizes the heavily quantized phase patterns of fast SLMs.

166, TITLE: Holographic Glasses for Virtual Reality
https://dl.acm.org/doi/abs/10.1145/3528233.3530739
AUTHORS: Jonghyun Kim, Manu Gopakumar, Suyeon Choi, Yifan Peng, Ward Lopes, Gordon Wetzstein
HIGHLIGHT: We present Holographic Glasses, a holographic near-eye display system with an eyeglasses-like form factor for virtual reality.

167, TITLE: Learning From Documents in the Wild to Improve Document Unwarping
https://dl.acm.org/doi/abs/10.1145/3528233.3530756

AUTHORS: Ke Ma, Sagnik Das, Zhixin Shu, Dimitris Samaras
HIGHLIGHT: In this work, we propose to improve document unwarping performance by incorporating real-world images in training.

168, TITLE: Compact Poisson Filters for Fast Fluid Simulation
https://dl.acm.org/doi/abs/10.1145/3528233.3530737
AUTHORS: Amir Hossein Rabbani, Jean-Philippe Guertin, Damien Rioux-Lavoie, Arnaud Schoentgen, Kaitai Tong, Alexandre Sirois-Vigneux, Derek Nowrouzezahrai
HIGHLIGHT: We propose a new Poisson filter-based solver that balances between the strengths of spectral and iterative methods.

169, TITLE: GWA: A Large High-Quality Acoustic Dataset for Audio Processing
https://dl.acm.org/doi/abs/10.1145/3528233.3530731
AUTHORS: Zhenyu Tang, Rohith Aralikatti, Anton Jeran Ratnarajah, Dinesh Manocha
HIGHLIGHT: We present the Geometric-Wave Acoustic (GWA) dataset, a large-scale audio dataset of about 2 million synthetic room impulse responses (IRs) and their corresponding detailed geometric and simulation configurations.

170, TITLE: Analytically Integratable Zero-restlength Springs for Capturing Dynamic Modes unrepresented by Quasistatic Neural Networks
https://dl.acm.org/doi/abs/10.1145/3528233.3530705
AUTHORS: Yongxu Jin, Yushan Han, Zhenglin Geng, Joseph Teran, Ronald Fedkiw
HIGHLIGHT: We present a novel paradigm for modeling certain types of dynamic simulation in real-time with the aid of neural networks.

171, TITLE: Reconstructing Translucent Objects using Differentiable Rendering
https://dl.acm.org/doi/abs/10.1145/3528233.3530714
AUTHORS: Xi Deng, Fujun Luan, Bruce Walter, Kavita Bala, Steve Marschner
HIGHLIGHT: To efficiently optimize our models in the presence of the Monte Carlo noise introduced by the BSSRDF integral, we introduce a dual-buffer method for evaluating the L2 image loss.

172, TITLE: Eikonal Fields for Refractive Novel-View Synthesis
https://dl.acm.org/doi/abs/10.1145/3528233.3530706
AUTHORS: Mojtaba Bemana, Karol Myszkowski, Jeppe Revall Frisvad, Hans-Peter Seidel, Tobias Ritschel
HIGHLIGHT: We tackle the problem of generating novel-view images from collections of 2D images showing refractive and reflective objects.

173, TITLE: NeuralPassthrough: Learned Real-Time View Synthesis for VR
https://dl.acm.org/doi/abs/10.1145/3528233.3530701
AUTHORS: Lei Xiao, Salah Nouri, Joel Hegland, Alberto Garcia Garcia, Douglas Lanman
HIGHLIGHT: In this paper, we propose the first learned passthrough method and assess its performance using a custom VR headset that contains a stereo pair of RGB cameras.

174, TITLE: Variable Bitrate Neural Fields
https://dl.acm.org/doi/abs/10.1145/3528233.3530727
AUTHORS: Towaki Takikawa, Alex Evans, Jonathan Tremblay, Thomas Müller, Morgan McGuire, Alec Jacobson, Sanja Fidler
HIGHLIGHT: Unfortunately, these feature grids usually come at the cost of significantly increased memory consumption compared to stand-alone neural network models. We present a dictionary method for compressing such feature grids, reducing their memory consumption by up to 100 × and permitting a multiresolution representation which can be useful for out-of-core streaming.

175, TITLE: -Functions Piecewise-linear Approximation from Noisy and Hermite Data
https://dl.acm.org/doi/abs/10.1145/3528233.3530743
AUTHORS: Marc Alexa
HIGHLIGHT: We introduce ?-functions, providing piecewise linear approximation to given data as the difference of two convex functions.

176, TITLE: Rendering Iridescent Rock Dove Neck Feathers
https://dl.acm.org/doi/abs/10.1145/3528233.3530749
AUTHORS: Weizhen Huang, Sebastian Merzbach, Clara Callenberg, Doekele Stavenga, Matthias Hullin
HIGHLIGHT: We introduce a new feather modeling and rendering framework, which abstracts the microscopic geometry and reflectance into a microfacet-like BSDF.

177, TITLE: ShaderTransformer: Predicting Shader Quality via One-shot Embedding for Fast Simplification
https://dl.acm.org/doi/abs/10.1145/3528233.3530722
AUTHORS: Yuchi Huo, Shi Li, Yazhen Yuan, Xu Chen, Rui Wang, Wenting Zheng, Hai Lin, Hujun Bao
HIGHLIGHT: In this paper, we present a deep learning-based framework for predicting a shaderâ€™s simplification space, where the shaderâ€™s variants can be embedded into a metric space all at once for efficient quality evaluation.

178, TITLE: QuickPose: Real-time Multi-view Multi-person Pose Estimation in Crowded Scenes

https://dl.acm.org/doi/abs/10.1145/3528233.3530746
AUTHORS: Zhize Zhou, Qing Shuai, Yize Wang, Qi Fang, Xiaopeng Ji, Fashuai Li, Hujun Bao, Xiaowei Zhou
HIGHLIGHT: This work proposes a real-time algorithm for reconstructing 3D human poses in crowded scenes from multiple calibrated views.

179, TITLE: A Motion Matching-based Framework for Controllable Gesture Synthesis from Speech
https://dl.acm.org/doi/abs/10.1145/3528233.3530750
AUTHORS: Ikhsanul Habibie, Mohamed Elgharib, Kripasindhu Sarkar, Ahsan Abdullah, Simbarashe Nyatsanga, Michael Neff, Christian Theobalt
HIGHLIGHT: Furthermore, training such models in a supervised manner often does not capture the multi-modal nature of the data, particularly because the same audio input can produce different gesture outputs. To address these problems, we present an approach for generating controllable 3D gestures that combines the advantage of database matching and deep generative modeling.

180, TITLE: Learning to Get Up
https://dl.acm.org/doi/abs/10.1145/3528233.3530697
AUTHORS: Tianxin Tao, Matthew Wilson, Ruiyu Gou, Michiel van de Panne
HIGHLIGHT: In this paper, we present a staged approach using reinforcement learning, without recourse to motion capture data.

181, TITLE: CLIP2StyleGAN: Unsupervised Extraction of StyleGAN Edit Directions
https://dl.acm.org/doi/abs/10.1145/3528233.3530747
AUTHORS: Rameen Abdal, Peihao Zhu, John Femiani, Niloy Mitra, Peter Wonka
HIGHLIGHT: In this work, we investigate how to effectively link the pretrained latent spaces of StyleGAN and CLIP, which in turn allows us to automatically extract semantically-labeled edit directions from StyleGAN, finding and naming meaningful edit operations, in a fully unsupervised setup, without additional human guidance.

182, TITLE: StyleGAN-XL: Scaling StyleGAN to Large Diverse Datasets
https://dl.acm.org/doi/abs/10.1145/3528233.3530738
AUTHORS: Axel Sauer, Katja Schwarz, Andreas Geiger
HIGHLIGHT: Our final model, StyleGAN-XL, sets a new state-of-the-art on large-scale image synthesis and is the first to generate images at a resolution of 10242 at such a dataset scale.

183, TITLE: Self-Distilled StyleGAN: Towards Generation from Internet Photos
https://dl.acm.org/doi/abs/10.1145/3528233.3530708
AUTHORS: Ron Mokady, Omer Tov, Michal Yarom, Oran Lang, Inbar Mosseri, Tali Dekel, Daniel Cohen-Or, Michal Irani
HIGHLIGHT: In this paper, we show how StyleGAN can be adapted to work on raw uncurated images collected from the Internet.

184, TITLE: Perceptual Requirements for Eye-Tracked Distortion Correction in VR
https://dl.acm.org/doi/abs/10.1145/3528233.3530699
AUTHORS: Phillip Guan, Olivier Mercier, Michael Shvartsman, Douglas Lanman
HIGHLIGHT: We present a virtual reality display system simulator that accurately reproduces gaze-contingent distortions created by any viewing optic.

185, TITLE: LeviPrint: Contactless Fabrication using Full Acoustic Trapping of Elongated Parts.
https://dl.acm.org/doi/abs/10.1145/3528233.3530752
AUTHORS: Iñigo Ezcurdia, Rafael Morales, Marco A. B. Andrade, Asier Marzo
HIGHLIGHT: LeviPrint is a system for assembling objects in a contactless manner using acoustic levitation.

186, TITLE: CCP: Configurable Crowd Profiles
https://dl.acm.org/doi/abs/10.1145/3528233.3530712
AUTHORS: Andreas Panayiotou, Theodoros Kyriakou, Marilena Lemonari, Yiorgos Chrysanthou, Panayiotis Charalambous
HIGHLIGHT: In this paper, we present a RL-based framework for learning multiple agent behaviors concurrently.

187, TITLE: Stroke Transfer: Example-based Synthesis of Animatable Stroke Styles
https://dl.acm.org/doi/abs/10.1145/3528233.3530703
AUTHORS: Hideki Todo, Kunihiko Kobayashi, Jin Katsuragi, Haruna Shimotahira, Shizuo Kaji, Yonghao Yue
HIGHLIGHT: We present stroke transfer, an example-based synthesis method of brushstrokes for animated scenes under changes in viewpoint, lighting conditions, and object shapes.

188, TITLE: MoRF: Morphable Radiance Fields for Multiview Neural Head Modeling
https://dl.acm.org/doi/abs/10.1145/3528233.3530753
AUTHORS: Daoye Wang, Prashanth Chandran, Gaspard Zoss, Derek Bradley, Paulo Gotardo
HIGHLIGHT: In this paper, we propose a new Morphable Radiance Field (MoRF) method that extends a NeRF into a generative neural model that can realistically synthesize multiview-consistent images of complete human heads, with variable and controllable identity.

189, TITLE: Drivable Volumetric Avatars using Texel-Aligned Features
https://dl.acm.org/doi/abs/10.1145/3528233.3530740

AUTHORS: Edoardo Remelli, Timur Bagautdinov, Shunsuke Saito, Chenglei Wu, Tomas Simon, Shih-En Wei, Kaiwen Guo, Zhe Cao, Fabian Prada, Jason Saragih, Yaser Sheikh
HIGHLIGHT: In this work, we propose an end-to-end framework that addresses two core challenges in modeling and driving full-body avatars of real people.

190, TITLE: Novel View Synthesis of Human Interactions from Sparse Multi-view Videos
https://dl.acm.org/doi/abs/10.1145/3528233.3530704
AUTHORS: Qing Shuai, Chen Geng, Qi Fang, Sida Peng, Wenhao Shen, Xiaowei Zhou, Hujun Bao
HIGHLIGHT: This paper presents a novel system for generating free-viewpoint videos of multiple human performers from very sparse RGB cameras.

191, TITLE: VoLux-GAN: A Generative Model for 3D Face Synthesis with HDRI Relighting
https://dl.acm.org/doi/abs/10.1145/3528233.3530751
AUTHORS: Feitong Tan, Sean Fanello, Abhimitra Meka, Sergio Orts-Escolano, Danhang Tang, Rohit Pandey, Jonathan Taylor, Ping Tan, Yinda Zhang
HIGHLIGHT: We propose VoLux-GAN, a generative framework to synthesize 3D-aware faces with convincing relighting.

192, TITLE: Deep Deformable 3D Caricatures with Learned Shape Control
https://dl.acm.org/doi/abs/10.1145/3528233.3530748
AUTHORS: Yucheol Jung, Wonjong Jang, Soongjin Kim, Jiaolong Yang, Xin Tong, Seungyong Lee
HIGHLIGHT: The goal of this paper is to model the variations of 3D caricatures in a compact parameter space so that we can provide a useful data-driven toolkit for handling 3D caricature deformations.

193, TITLE: Animating Portrait Line Drawings from a Single Face Photo and a Speech Signal
https://dl.acm.org/doi/abs/10.1145/3528233.3530720
AUTHORS: Ran Yi, Zipeng Ye, Ruoyu Fan, Yezhi Shu, Yong-Jin Liu, Yu-Kun Lai, Paul L. Rosin
HIGHLIGHT: Simply concatenating a realistic talking face video generation model with a photo-to-drawing style transfer module suffers from severe inter-frame discontinuity issues. To address this new challenge, we propose a novel framework to generate artistic talking portrait-line-drawing video, given a single face photo and a speech signal.

194, TITLE: EAMM: One-Shot Emotional Talking Face via Audio-Based Emotion-Aware Motion Model
https://dl.acm.org/doi/abs/10.1145/3528233.3530745
AUTHORS: Xinya Ji, Hang Zhou, Kaisiyuan Wang, Qianyi Wu, Wayne Wu, Feng Xu, Xun Cao
HIGHLIGHT: In this paper, we propose the Emotion-Aware Motion Model (EAMM) to generate one-shot emotional talking faces by involving an emotion source video.