SIGGRAPH 2018: Studio
English

Building a Feedback Loop Between Electrical Stimulation and Percussion Learning

Ayaka Ebisu
Satoshi Hashizume
Digital Nature Group, University of Tsukuba

Yoichi Ochiai
Digital Nature Group, University of Tsukuba, Pixie Dust Technologies, Inc.

We apply electrical muscle stimulation (EMS) to the learning of rhythm. By the movement of muscles stimulated using EMS, users are able to acquire what kind of arms and legs to move at what timing and play the rhythm of drums that require the simultaneous movement of the limbs.

Design Engine Community Project: Generate Quick Adhoc Inventions to Explore at SIGGRAPH and in the Studio

Matthew Griffin, Lizabeth Arum
Ultimaker

We're hosting a brand new SIGGRAPH edition of "The Design Engine" card game, a constantly revolving series of design challenges hosted within the Studio. Participants can join for a short startup round, or stick around to design and develop their projects using the tools available in the SIGGRAPH Studio Workshop.

Design Method of Digitally Fabricated Spring Glass Pen

Kengo Tanaka
Kohei Ogawa
Tatsuya Minagawa
Yoichi Ochiai
University of Tsukuba, Digital Nature Group

We present a method to create a pen that suits people's preferences easily by using a 3D printer. Elasticity can be reproduced by giving the spring structure, and a capillary phenomenon occurs by applying a fine gap to the pen tip.

Immersive Previz: VR Authoring for Film Previsualisation

Quentin Galvane
INRIA Rennes

I-Sheng Lin
NCCU

Marc Christie
IRISA/INRIA Rennes Bretagne

Tsai-Yen Li
NCCU

One Man Movie is a VR authoring system that enables the crafting of filmic sequences with no prior knowledge in 3D animation. The system is designed to reflect the traditional creative process in film pre-production through stages like scene layout, animation of characters, placement of cameras, and editing.

Lightform: Procedural Effects for Projected AR

Kevin Karsch
Lightform, Inc.

Lightform LF1 is a hardware device that enables fast and convenient projected AR for any projector. Through a novel visible structured light technique, the LF1 allows users to apply procedural effects automatically and quickly create projected AR content.

Metamaterial Devices

Alexandra Ion, Patrick Baudisch
Hasso Plattner Institute, University of Potsdam

Traditionally, metamaterials were understood as materials with deformation properties that are defined by their inner structure. We, however, don't think of them as materials, but rather as devices. We present metamaterial devices, such as analog or digital machines, and software tools that assist novice users in designing and fabricating them.

PaperPrinting: A Machine for Prototyping Paper and Its Applications for Graphic Design

Wataru Date
Keio University

Yasuaki Kakehi
The University of Tokyo

We present a system that makes paper through additive manufacturing process by using a dispenser mounted on XY plotter. By using this system, graphic designers can design and output paper itself, which is difficult in an existing paper production process

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Raymarching Toolkit for Unity
Kevin Watters
Independent

Fernando Ramallo
Independent

Raymarching Toolkit for Unity is a Unity 3D plugin enabling artists and non-programmers to create scenes using raymarching, a graphics technique previously limited to experts and hackers in the demoscene. Unusual effects like blending shapes, reflecting geometry into kaleidoscopic patterns, and applying magical distortions all become within reach.

Real-Time Motion Generation for Imaginary Creatures Using Hierarchical Reinforcement Learning
Keisuke Ogaki, Masayoshi Nakamura
DWANGO Co., Ltd.

Describing the motions of imaginary original creatures is an essential part of animations and computer games. In this system, virtual creatures learn to move using hierarchical reinforcement learning. By combining reinforcement learning and simple exploration, we can achieve a light learning system capable of being operated on mobile devices.

Lightwork: Infinity Alley
Derek Gaw, Tim Rolls, Edward Budiman, Paul Reimer
MakerLabs

Lightwork is an open source application that simplifies the mapping of addressable LEDs in 2D and 3D spaces. Infinity Alley is an interactive and volumetric LED environment where participants can learn how to use Lightwork to map LEDs to create custom visualizations.