

Ben Bogart Presents



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Territoires ouverts



Open Territories

What will be covered

- What is Free Software?
- Basic introduction to Pure-Data
 - Installation of PixelTANGO and basics
- Introduction to the PixelTANGO architecture
 - Layers, headers, footers and modifiers
- Demo Patches
- Future Functionality
- Introduction to basic PixelTANGO modules
- Lets try it!

Free Software

- PixelTANGO is released under the General Public Licence.
- PixelTANGO is free to use, distribute and improve.
- It is the hope that PixelTANGO continues to be developed by the community after the conclusion of the Open Territories project.

Pure-Data and GEM

- pixelTANGO is built on top of two other pieces of software:
 - Pure-Data (aka pd) written by Miller Puckette, in 1996, is an open-source data-flow language similar to MAX/MSP.
 - GEM (Graphics Environment for Multimedia) is a library for Pure-Data that allows 3D graphics, video and images to be created in Pure-Data. It was originally written by Mark Danks for IRCAM's ISPW system in 1995 and ported to Pure-Data in 1996. GEM utilizes OpenGL which makes it scale very well to modern graphics cards. GEM is released under the GPL.

PixelTANGO Introduction

- pixelTANGO (aka pt) is a set of abstractions and externals, for pd/GEM, that make using pd and GEM easier, faster and more satisfying.
- The purpose of pt is to balance usability and ease of learning with programmability, modularity and flexibility.
- This balance means that pt will always be playing catch-up to build easy to use interfaces to the ever growing and complex functionality of GEM.
- This means that often pixelTANGO will be used with “traditional” pd/Gem programming for and by artists to create performances as well as contribute more specialized pt modules back to the community.

PixelTANGO Objectives

- Make pd/Gem more accessible to artists by increasing the ease of use and making a more shallow learning curve
- Keep the modular nature of pd/Gem intact
- Ability to use full resolution DV videos, live, recorded and streamed over IP.
- Artist can work in 2D and 3D or both
- External control of pt through MIDI, OSC and custom hardware (Via AID^{*1})
- Community supported and developed

PixelTANGO Architecture

- Each visual element is defined by a “layer”. Layers are made up of a header and a footer, with a number of modifiers in between.
 - Header gives the layer a stacking order
 - Footer defines the type of layer
 - Modifiers control scale, size, colour, filters, etc.
- The header, footer and modifier objects are attached by two sets of patch cords (buses). The left bus passes (GEM) render data. The right bus passes pt control data.
- All pt modules contain both a high-level GUI and a hackable underlying implementation

PixelTANGO Functionality

- Functions in the current release:
 - Easy two file drag and drop installation
 - Complete documentation
 - DV over firewire, network streams (QTL or SDP), still images and movie files as inputs.
 - Number of layers only limited by available hardware
 - Filters for layers with plug-in architecture
 - OpenGL effects for layers (rotate/scale/translate etc..)
 - Text & 3D model layers
 - Configurable smooth interpolation on all parameters
 - Preset (state) saving and preset animation
 - Quick access to directories of files
- Lets look at some examples of these features....

PixelTANGO Functionality In Development

- Modes of Control
 - External control (MIDI, OSC, AID)
 - LFO bank for automated parameter control
 - BPM Sync
 - Parameter queries
- 3D Features
 - Vertex and Pixel Shaders
 - Vertex Arrays
 - More 3D effects and transitions
 - More 3D forms
 - LighTWIST integration
- Streaming
 - Ability to receive DVTS streams

PixelTANGO Modules

- Basic pT modules

- pt.window Control Render Window
- pt.layer Layer Header
- pt.video Video Layer Footer
- pt.layerfx Pixel-based layer effects
- pt.translate OpenGL effect
- pt.rotate OpenGL effect
- pt.scale OpenGL effect
- pt.fader OpenGL effect
- pt.squeeze OpenGL effect
- pt.source Choose input type

Links

- The SAT
 - <http://www.sat.qc.ca/>
- Territoires Ouvert / Open Territories
 - <http://www.tot.sat.qc.ca/>
- Pure Data
 - PD: <http://www.pure-data.info/>
 - Gem: <http://gem.iem.at/>
- Ben's Page:
 - <http://www.ekran.org/ben>
- PixelTANGO Download
 - <http://www.ekran.org/ben/research/PixelTANGO-v0.3.2G4.tgz>

Lets Try it

- What do you want to use it for?
- What questions do you have?
- Anything you want to try?