

The i-score interactive sequencer

an intermedia sequencer for interactive scenarios authoring

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LaBRI, Blue Yeti, GMEA

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The problem

- ▶ A lot of tools for entirely fixed temporal content
→ traditional song-making.
- ▶ A lot of tools for fully interactive content
→ artistic installations.
- ▶ What goes in between ?

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Futuroscope, France : the Sprinter



Credits : Blue Yeti

Tumbleweed



Credits : Les Baltazars

The software

The screenshot displays a software interface for creating and editing automation curves. The interface is divided into several sections:

- Menu Bar:** File, Edit, Object, Play, Tool, View, Settings, About.
- Toolbar:** Interpolate states, Select and Move, Create, Move Slot, Sequence, Scale, Grow/Shrink, Keep Duration, Create Curves, Undo Move a comment block.
- Devices Panel (Left):** A list of parameters with their current values. The 'OSCdevice' folder is expanded, showing parameters like 'flash', 'master', 'still', 'flash', 'myColor', 'soundOutLevel', 'trackLevel', 'soundLevelCapture', 'myColorG', 'myColorR', 'myColorB', 'myColorG', 'myColorR', 'myColorB', 'backgroundColorB', 'backgroundColorG', 'backgroundColorR', 'alpha', 'scale', 'speed', 'TimeRecPosition', 'layerSetGroupB', 'layerSetGroupA', 'crossfader', 'layer', 'mediaSet', 'media', 'auto', 'transformer', 'on', 'type', 'particle', 'pitch', 'thickness', 'subdivX', 'subdivY', 'soundInput', 'dimappingAlp', 'colorOn', 'soundInput', 'resetLevel', 'dimappingL', 'fillMode', 'shapeType', 'matrix', 'RipXute', 'RipXere', 'RipXama', 'RipXeru', 'extrusionLe...', 'oscDevice'.
- Timeline/Graph (Center):** A horizontal timeline with a graph showing automation curves. The timeline has markers at 0.00.0, 0.05.0, 0.10.0, 0.15.0, 0.20.0, 0.25.0, and 0.30.0. Annotations include:
 - "This will trigger when a condition on remote parameters become true" (pointing to a vertical line).
 - "Various elements can rejoin themselves" (pointing to a curve that splits and rejoins).
 - "The full dots will send a cue (a list of OSC messages)" (pointing to a vertical line with a dot).
 - "Boolean condition on remote parameters" (pointing to a vertical line with a dot).
 - "A curve", "Other curves", "In sequence" (pointing to different parts of the blue curve).
 - "Automation.1", "top: OSCdevice/master", "OSCdevice/made" (pointing to specific automation elements).
 - "A loop" (pointing to a section of the blue curve).
 - "Loop pattern" (pointing to a green section of the blue curve).
- Inspector Panel (Right):** Shows settings for the selected element, 'Other curves'. It includes fields for Name, Label, Full view, Start State, End State, Default Duration (0.00.06.809), Loop content, Processes, View, Add Process, Processes, Automation.1, OSCdevice/master/flash, Min (0.00), Max (1.00), Display in new Slot, Start (OSCdevice/master/flash 0), End (OSCdevice/master/flash 0.2), Duration (0.00.06.809), and a list of Automation.2 through Automation.5.

Contributors, Companies, Agencies involved



LaBRI
www.labri.fr



Blue Yeti
www.blueyeti.fr



GMEA
www.gmea.net

le **cnam**

CNAM :
CEDRIC, ENJMIN
cedric.cnam.fr



ISTS
ists-avignon.com

ENSATT

ÉCOLE NATIONALE SUPÉRIEURE DES ARTS ET TECHNIQUES DU THÉÂTRE

ENSATT
ensatt.fr

Artists: Les Baltazars, Renaud Rubiano, Antoine Villeret...

What i-score is :

- ▶ A visual **programming language**
→ Conditions, loops, structuring, in a timeline
- ▶ Free software : **GPL v3** (UI) & LGPL v2.1 (Engine)
- ▶ Built in **C++** (Qt, CMake)
- ▶ Available on Linux / OS X / Windows
- ▶ Alpha-quality ☹️

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What i-score is not :

- ▶ PureData (yet)
- ▶ Ableton Live (yet)
- ▶ Bug-free (yet ! 😊)

Does not operate on its own !

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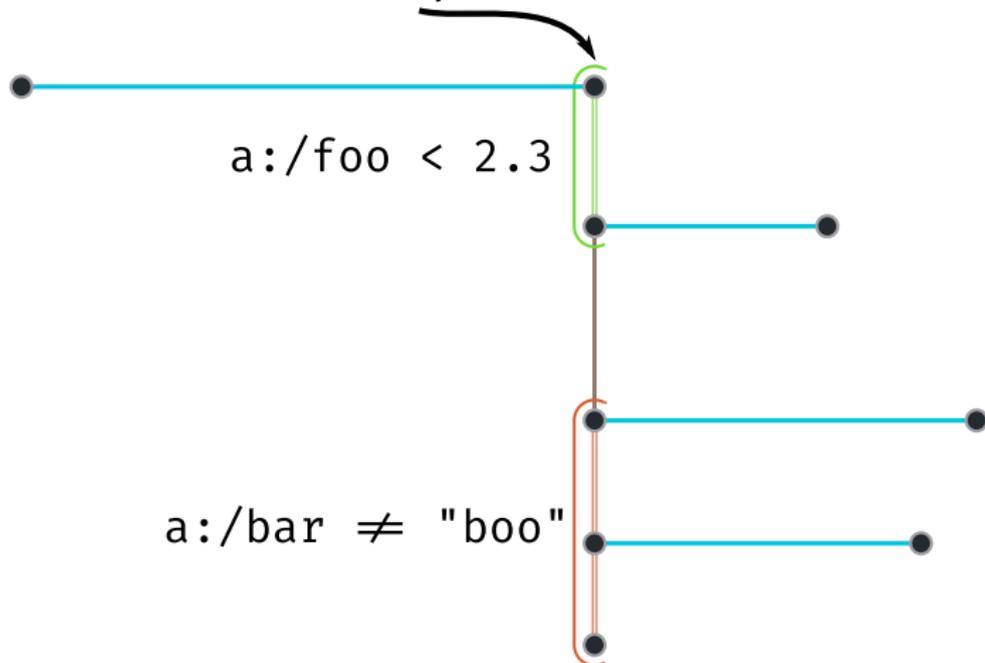
Inter-operability

- ▶ Compatible environments :
Max/MSP, **PureData**, Unity3D, **OpenFrameworks**,
Processing, **Jamoma**, Modul8, Millumin, Quartz
Composer, **Qt**...
- ▶ Anything that communicates over **OSC**.
- ▶ Extensibility via **plug-ins***

*API not stable until v 2.0

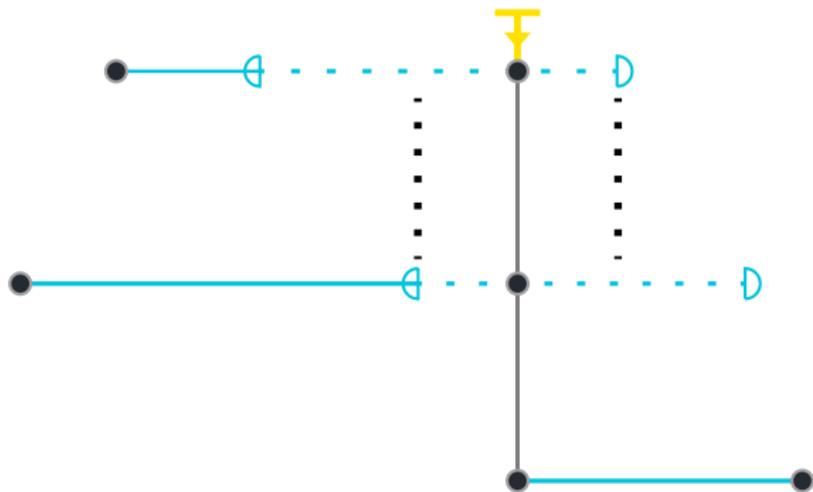
Conditions

Evaluated at this point in time

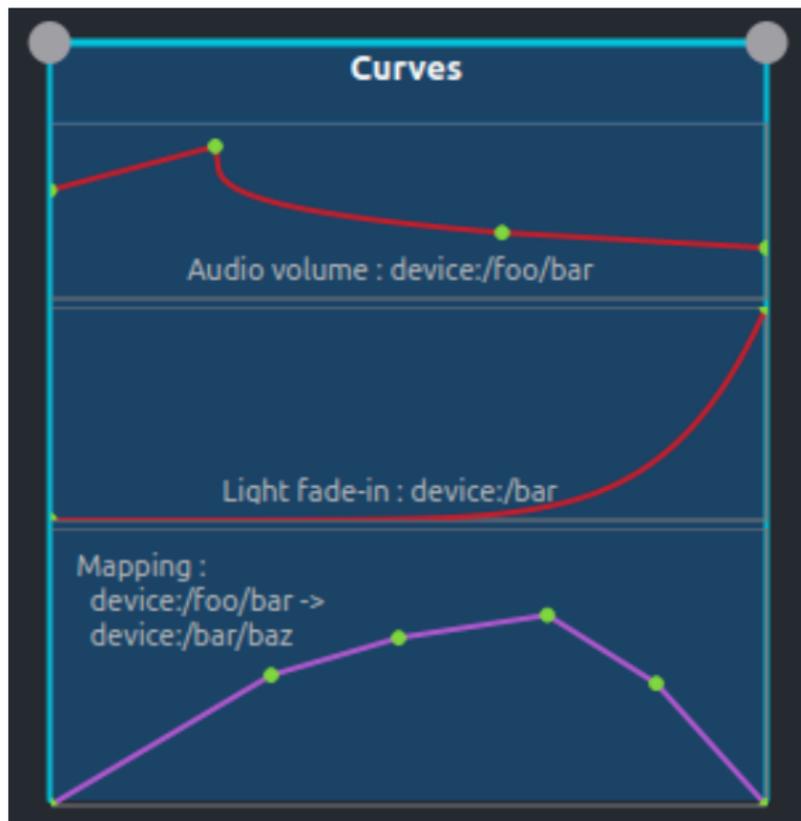


Triggering

Video:/pony/best = "Fluttershy"



Automations, mappings



Various kinds of curves

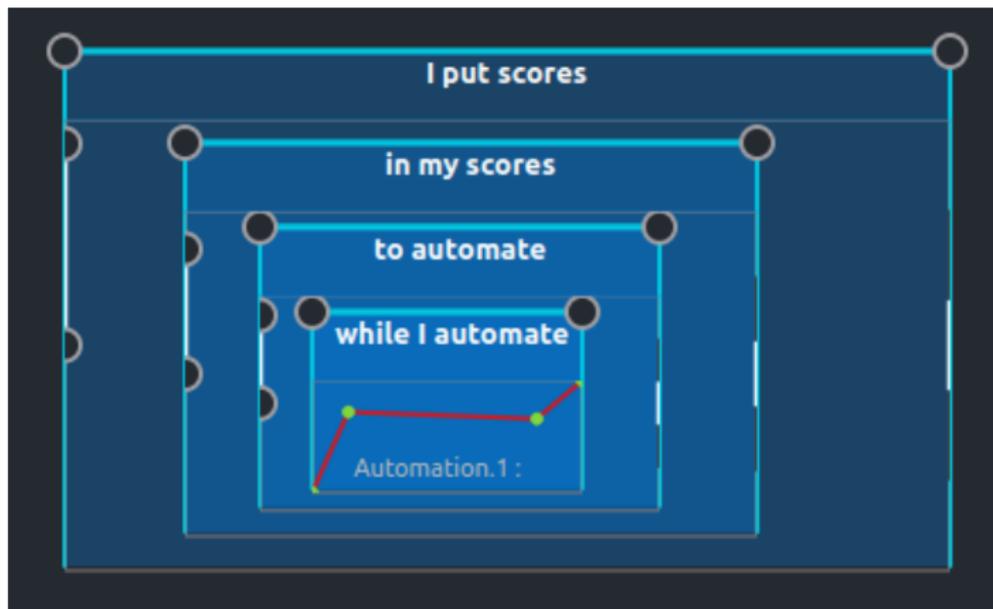
JavaScript

```
function(t) {  
    var obj = new Object;  
    obj["address"] = 'dev:/foo/bar';  
    obj["value"] = t + iscore.value('other:/baz');  
    return [ obj ];  
}
```

Will get called at each tick

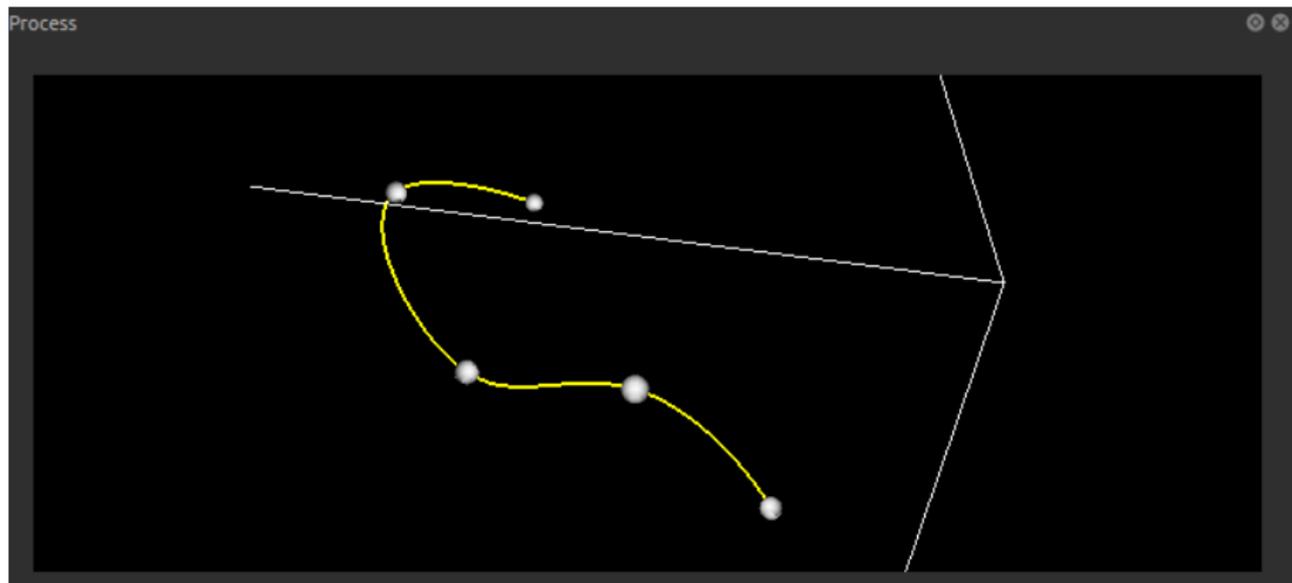
- ▶ Uses Qt's QJSEngine.
- ▶ For now API with a single function : fetch a remote value.

Hierarchy



Scenarios can be **nested** arbitrarily

WIP : Spatial automations



- ▶ **3d splines** that uses VTK. Can be used to create paths in space for instance.
- ▶ **Spatial mappings** to compute collisions, distances, etc. and performs actions according to the result of such computations.

Future : distribution ?

- ▶ Currently : multiple instances can work together at the editing stage.
- ▶ In progress : distributed execution.
- ▶ Example scenarios :
 - ▶ 100 phones controlling a parameter together.
 - ▶ Live backups if a computer dies during performance.
 - ▶ Offloading due to performance requirements.

Future : other features

- ▶ **MIDI, WebSockets** support
- ▶ Some level of **patching**, like Pd
- ▶ Complete **remote-control** abilities.
Currently : execution can be followed via a web page.
- ▶ Port execution engine to **FPGA**.
- ▶ Audio engine ?

Contributing

- ▶ **UX, UI** (mock-ups were done but not entirely implemented)
- ▶ **Documentation**, writing demo scenarios
- ▶ **Translations**
- ▶ Implement the **Minuit** protocol in your software with the OSSIA API
- ▶ Many "low-hanging fruit" TODOs
- ▶ Mobile devices ports :
 - ▶ **Android** : builds and run but requires adapted UI.
 - ▶ **Web port** : with PNaCl, runs but crashes. Will open the way to WebAssembly.
 - ▶ **iDevices** (many artists use them).

Links

- ▶ **Grab a release !**

`github.com/OSSIA/i-score/releases`

- ▶ **Protocols and implementations :**

`github.com/OSSIA`

- ▶ **Official website (not up-to-date) :**

`i-score.org`

Thanks ! Questions ?

Credits: 'simple' Beamer theme, Facundo Muñoz; Fira font