

Fabio Cionini

Projects Highlights

I've been working with computers since forever. As a kid I had one of those marvelous Commodore 64 home computers from the eighties and learned to code in Basic by myself on it. I remind that I wanted to learn how to make games instead of simply playing them like other kids did.

After abandoning computers and pursuing music and cinema studies at University, I came back again at it, becoming a graphic designer and web developer.

In 2007 I founded a company, an interaction design studio, with a longtime friend of mine.

We basically invented our job, being a then almost unheard-of (at least in Italy) mix of software development, prototyping, product design, user experience research and visual graphics.

Since 2007 I worked on dozens of projects while at TODO, ranging from interactive installations to realtime graphics to backend systems to mobile applications, using a wide array of technologies and programming languages, playing different roles (Creative technologist, software developer, data architect, UX/UI designer, team manager).

My role has always been a crossover between a team manager, a developer and an interaction designer. I often had the chance to be part of the project in all its phases of development: from concept to design and technology choices, planning, team management, development, test, deploy.

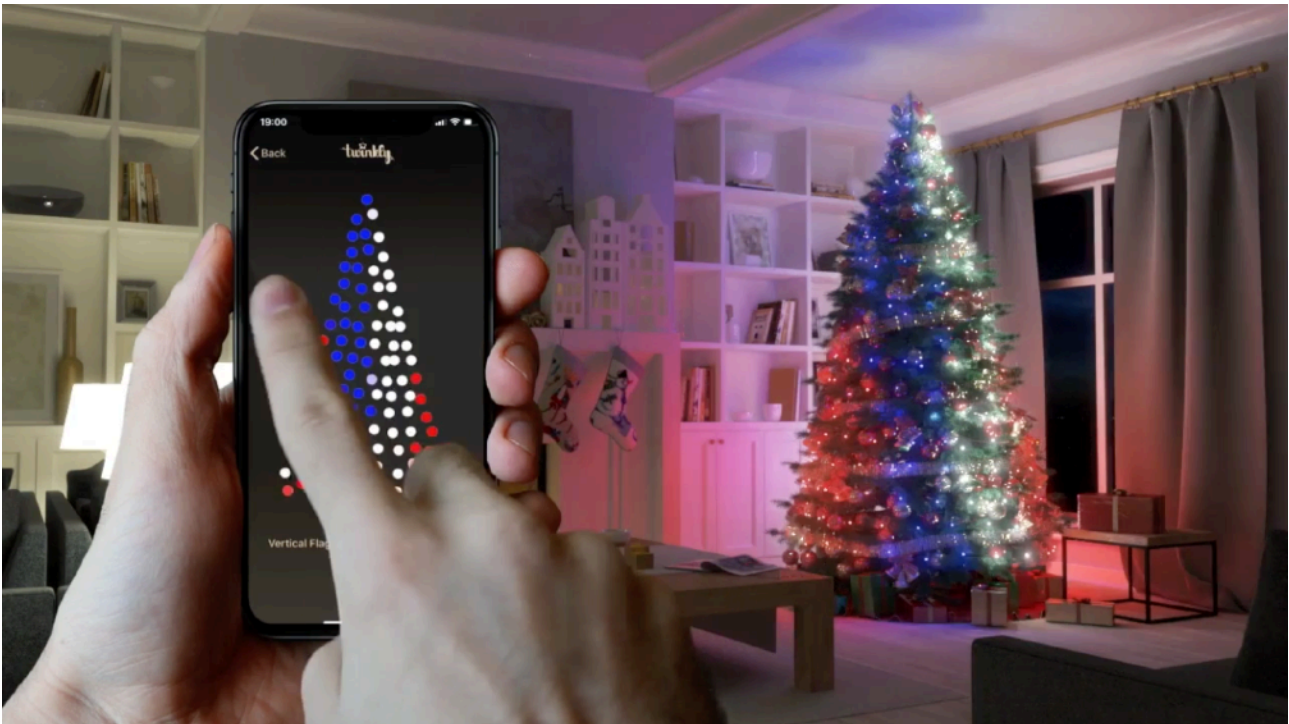
I left TODO in 2015 to become Head of Development at Engage Works Ltd in London, and then in 2016 I came back to Italy where I currently work as a senior consultant for software projects, developer and CTO.

The following selection of projects will give you a summary of what I have done in the last years.

I'd be glad to talk with you about these and also other interesting projects that have been excluded for the sake of brevity list but are no less important.

Thank you!

Twinkly - Smart Decorations (2018)



<https://www.twinkly.com>

Twinkly is a smart decoration system that has reinvented Christmas decorations.

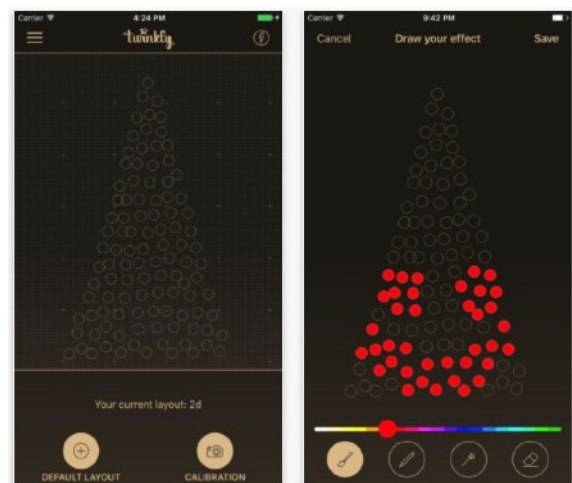
Over 100 different products (strings, trees, garlands, figures) can be controlled by the Twinkly iOS/Android application (and even by voice with Google Home).

The lights can be mapped using the phone camera to unlock incredible animations and effects that react to music and can be customized or even “painted” from scratch and in real-time from within the app itself.

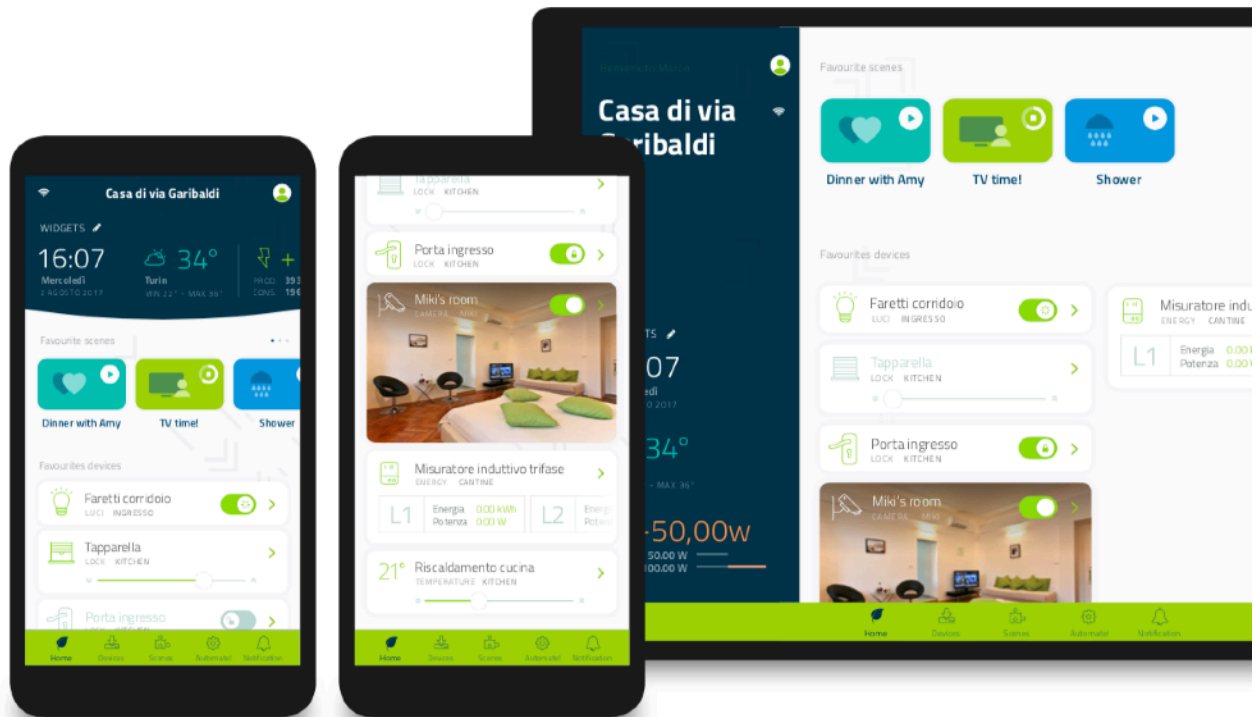
These lights are produced in China and sold worldwide (USA, Europe, China) since 2016.

My job as CTO of Ledworks srl is to manage the development team and contractors, being responsible for software delivery and integration with the hardware. I overview research and development, app prototyping, system architecture, online services.

Ledworks, besides Twinkly, also operates on professional lighting equipments with different, commercial-grade hardware and software, of which I am also responsible.



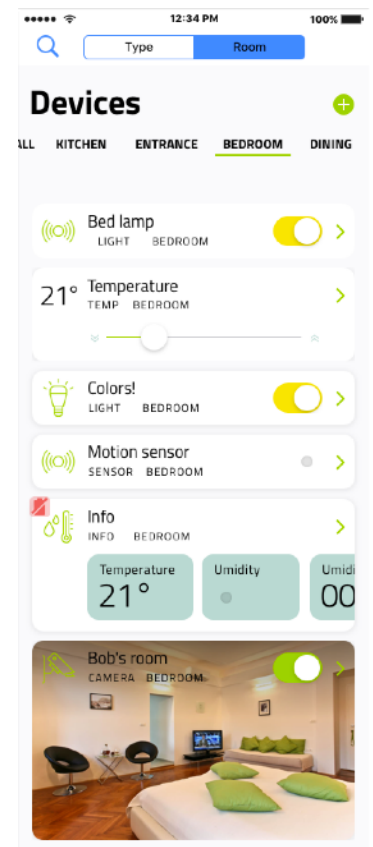
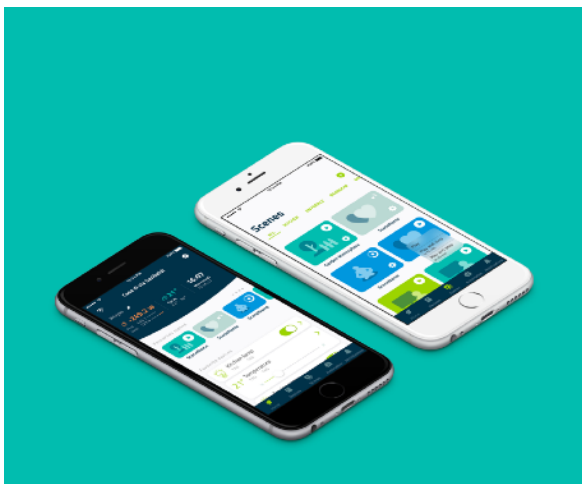
MyVirtuoso Home ES (2018)



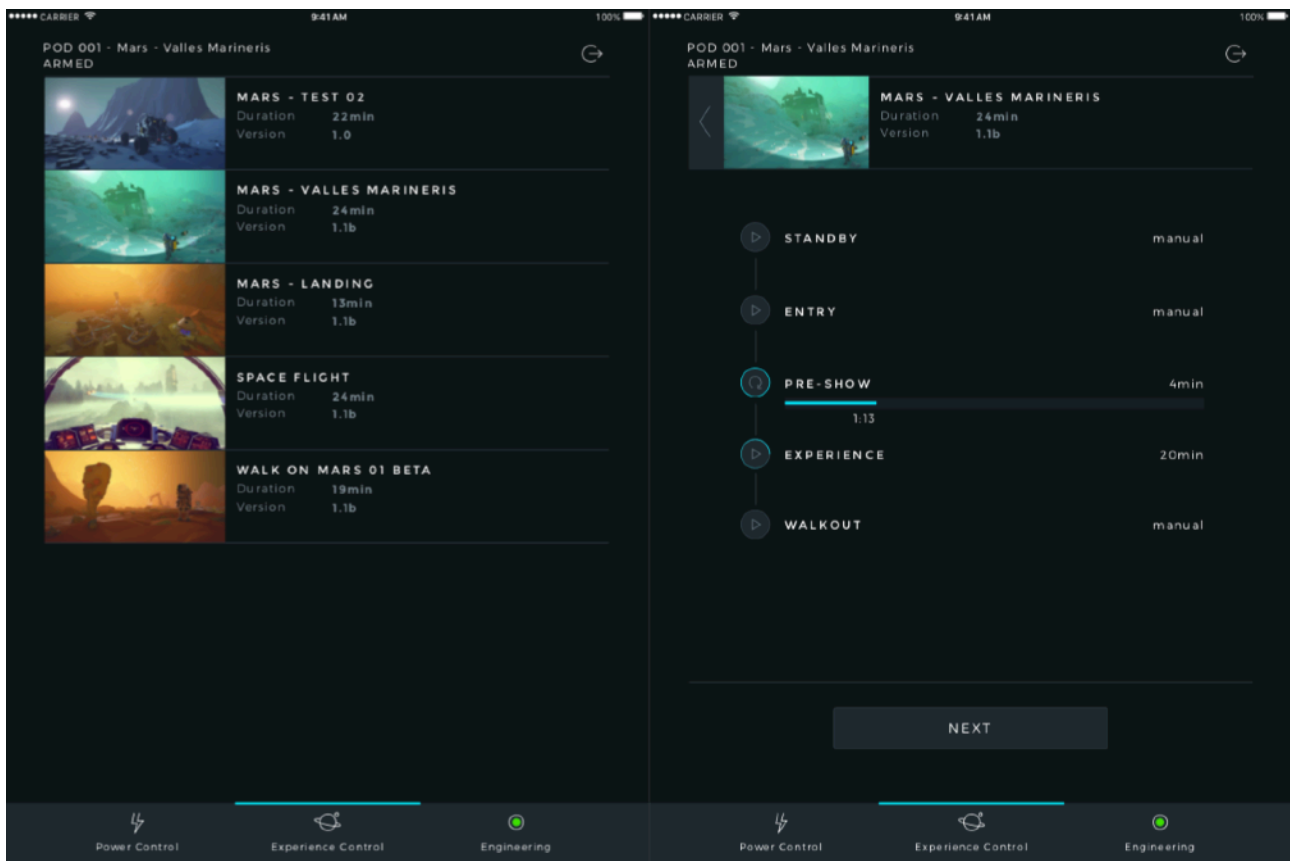
<https://www.myvirtuosohome.com>

MyVirtuoso is a smart home system that enables the customer to control, operate and monitor many smart home/office appliances such as temperature regulation (air conditioning, heaters), energy production and consumption (solar panels, smart plugs), lights and sockets, automation devices, intrusion alarms, webcams, safety devices (smoke and gas sensors, flood sensors). In team with graphic designer Francesco Carletto, I have managed the project, designed the software architecture and developed this very complex hybrid iOS/Android app (using Ionic 3 framework, based on Angular 5, and Cordova native framework) that will be on app stores soon.

This application really pushes forward what can be done with hybrid, web-based technologies enabling the user to have a UX and look and feel that is familiar yet innovative and functional.



Enterspace - Control Panel (2017)



<https://www.enterspacevr.com/sweden/>

Enterspace is the largest VR center in Sweden, designed around the theme of space exploration. People can immerse themselves in planet atmospheres or voyages around the stars while freely moving around. For them, together with designer Andrea Pinchi, I developed a mobile web application running on iPads (using the Vue.js framework) that interfaces to their backpack computers and servers and allows them to monitor and control every aspect of the experience (power control, controlling experience phases, monitoring running time, computer and battery status, define sequences, update settings).



ENEL Pavilion for Expo (2015)



<http://enelsharing.enel.com/en/expo-2015-en/incontrarsi-smart-grid-padiglione-enel-per-expo-2015/>

As TODO we designed and developed several interactive and multimedia areas of ENEL (the main electric company in Italy) pavilion for Expo 2015 in Milan providing contents, graphics, software and hardware design and development.

In this project I was the main software designer and developer for the “Bosco di Luce” (Light Forest) installation: an audio/video system that surrounds the whole pavilion featuring 632 fully software controlled LED-lit poles (over 2500 DMX channels) synchronized with a 32 speakers spatialized audio system to create an immersive experience.

The goal was to provide an evocative and immersive experience for people approaching and walking into the pavilion, creating a landmark place for one of the main sponsors of Expo 2015.

While the “forest” space has been designed by Piurarch architecture studio, TODO provided with all the software for the light and sound system.

The system has to run 12 hours a day for 6 months, from May 1 to October 31, 2015.

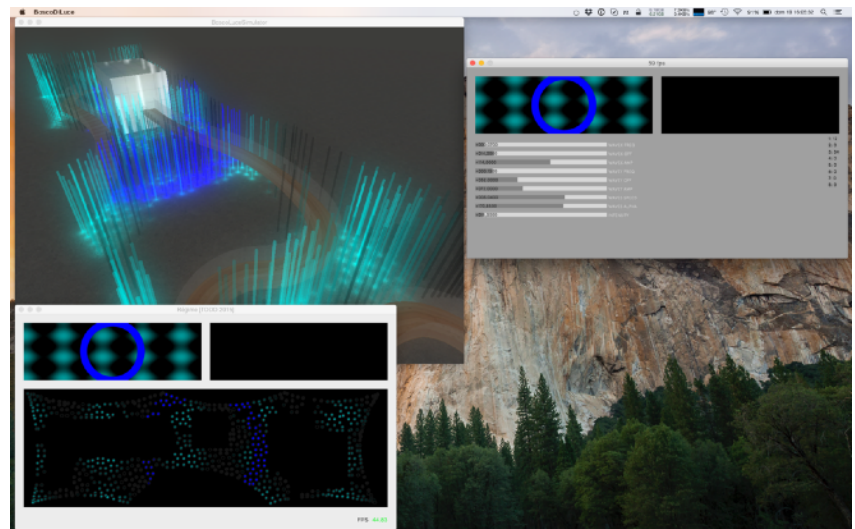
My job in this project has been to:

- design the software architecture to be stable, consistent and easily tweakable and customizable on-site (we could not test the final setup until a couple of days before the opening because of construction delays)
- choose the right technologies (hardware and software) to provide a flawless performance (45 fps for DMX)
- design and implement the interaction between the software pieces (network protocols, data specifications)
- write the DMX controller software and the visual output and audio control software.

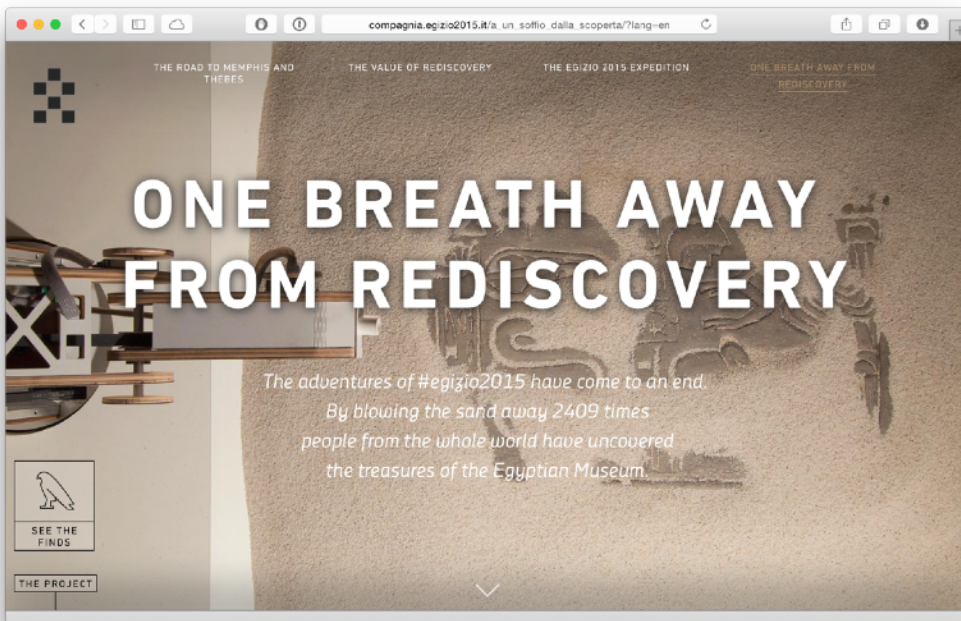
The visual output software is made with Processing: it generates real time animations that can be controlled and sequenced through an external OSC timeline software; these animations are sent via Syphon to the DMX controller software (written in C++/ OpenFrameworks) that maps the pixels to the lights and converts the color values into ArtNet/DMX data to be sent to the ArtNet node.

At the same time, the Processing software controls the 32-channels audio system by sending (via OSC) data about the animation objects (size, speed, location) to create a real-time spatialized audio that follows the animations.

The Processing software has been designed to be easily customized with any animation that can be “plugged in” by coding it in a separate class that has only to implement an interface to be compatible with the system.



Turin Egyptian Museum website (2014/2015)



www.egizio2015.it

The campaign:

www.youtube.com/watch?v=fXCF8A8gl8Y

The display case and the robot arm:

www.youtube.com/watch?v=43t_UCqdNg0

www.youtube.com/watch?v=eJjDbJCiHaQ

Between 2014 and 2015 TODO helped Compagnia di San Paolo, a bank foundation that financed the restoration of the Museo Egizio (which is the second most important Egyptian museum in the world) to communicate the work in progress and the final unveiling of the new Museum.

The campaign featured printed advertising, a website that allowed people to explore and get to know what was happening inside the Museum, a 3.5 mt software-controlled tall hourglass that was installed in the main square of Turin for 6 months, showing the time remaining for the unveiling, and also a display case containing a robot arm which could be activated by choosing a point and blowing on a microphone: the robot itself will blow on that point to unveil a find from the sand.

The robot arm went on a road show first, where people could interact with it using an iPad app, and then stayed at the Egyptian Museum being reachable and controllable on the website from all over the world.

Over 2400 people signed up and waited in queue to blow on the computer microphone and see the real-time video streaming of the robot arm moving and unveiling the finds. After that, the user could share the video clip of the robot controlled by her own blow.

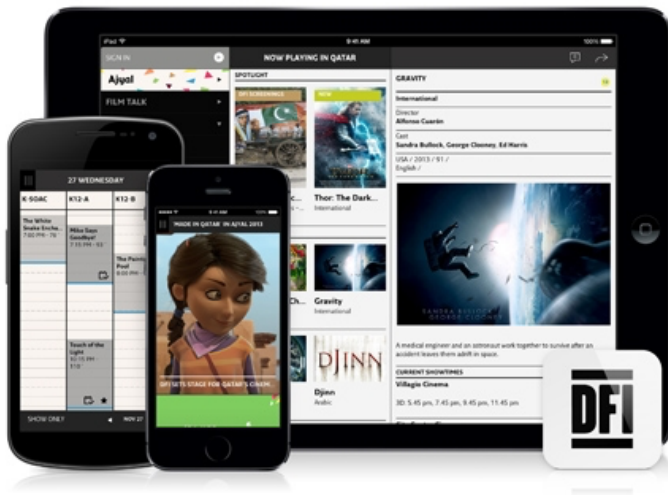
TODO designed and developed the whole campaign: concept, visual identity, website, installations, software, hardware.

On this project I was responsible for the design and development of the server software that controlled the robot arm in the online experience: user sign up, queue management, interaction with the robot software and the live streaming system, error management, video clip creation and sharing with social APIs.

I worked on a team together with graphic designers, interaction designers, frontend developers.

The backend software was built on Node.js using MySQL as database.

Doha Film Institute mobile application (2012/2013)



www.dohafilminstitute.com/institute/mobile

In 2012/2013 we developed the Doha Film Institute official app, an iOS (iPhone/iPad) and Android native mobile application that promotes the activity of the Qatari film institute and the Doha Tribeca/Ajyal Film Festival, the most important Middle-East film festival. The app features festival features (screenings calendar, venue maps, online ticketing) and year-round activities such as magazine contents, social activities, cinema screenings.

TODO designed the concept, UI, UX and contents.

We also developed the backend internally while the mobile app itself was developed by contractors under our responsibility.

My jobs in the project:

- Design of the information architecture (database structure, data model)
- Design of the server-to-server interaction flow between the DFI existing backend systems (website CMS, Festival management software, ticketing system) and the mobile backend software
- Design and write specifications of the REST-based API for mobile application data retrieval and synchronization (PHP/MySQL, OAuth 1.0a, Linux stack) and for the CMS
- Main development of the backend application (REST API, festival management and ticketing middleware)
- Coordination and management of internal junior developers and external contractor developers
- Contribution to UI/UX design decisions

In a short timeline frame (3 months) we succeeded to design, develop, test and publish this complex frontend/backend software with real-time updates, secure ticketing system, user authentication, social sharing features etc. also providing a full web-based mobile CMS.

The backend software for which I was responsible interacts with different other backends and content management systems:

- news, articles and media assets that are published on the website CMS have to be imported, adapted and stored on the mobile backend software, while the ad-hoc mobile CMS allows to create, edit and publish mobile-only content
- the festival management system that provides information on festival films (screenings, locations, prices)
- the ticketing system that allows to book seats and securely purchase tickets.

Chinagram (2011/2012)



www.todo.to.it/#projects/chinagram

www.chinagram.info

This iPad/iPhone application tells the story of Chinese writing in an interactive and immersive way.

The app, based on a book written by a Chinese language University professor and published by Antonio Vallardi Editore, was designed and developed internally.

My jobs in the project:

- Involvement in the design process (concept, UX, UI) for the original iPad app and then for the iPhone version
- Software design, data model design
- Lead Objective-C developer, QA, deploy
- Junior developers and graphics designers management

Chinagram features over 200 Chinese signs which are explained in their evolution through the centuries, along with audio samples of the spoken symbols, categories, related symbols, search, and a section that helps learning how to draw them.

The application was well-received and featured in several App Stores as App of the Week. Apple also used Chinagram footage for an official TV ad.

It was developed to run on the first iPad model which was heavily underpowered, so I had to optimize the app very carefully given the CPU and memory constraints, and however been able to deploy a very stable app while not having to remove the visual effects that were part of the original design.



NIKE HyperFuse — interactive façade (2011)



<http://tiodio.todo.to.it/#projects/hyperfuse>

<https://www.flickr.com/photos/todotoit/sets/72157627568554825/>

<https://vimeo.com/30905000>

In 2011 Nike invited TODO to think about how to engage people during the opening of the first Nike Store in Turin, in the beautiful historical square Piazza Castello.

We created a 4-story-high sequencer using Processing and projected it on the baroque façade of a building. An electronic music machine, open to all who felt like getting into the game, stepping up to the control platform, and letting a Kinect-equipped station sense their body's contour and movements. Interactivity was literally in their hands, as they discovered the power to turn windows on and off with a mere touch, revealing musical notes and samples that combined into ever-changing audio loops.

For this project I took part in the process as a creative technologist, choosing the right set of hardware and software to develop the idea, and then developed the Kinect-based C++ software that captured the shape of the person and the hand tracking algorithms to let him play. The software was connected to the Processing visual application to send shape data and to the Ableton Live patch to control the sounds.

