

Curriculum Vitae

Contact info

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Work Experience

Dates June 2013 - Present
Role **Director of Technology; Interactive Media Program.**

Highlighted work

- Coherence - Adaptive rhythm training game, VR and Mobile.
- Labyrinth - VR and mobile navigation game to train long term memory.
- Project management with external contractors.
- Subnets Brain – VR visualization of MRI and Ecog data for a DARPA project.
- Engage – Cognitive training videogame for teenagers for delayed gratification and mindfulness
- Mentoring: 30+ Highschool and undergrad students and volunteers.
- Rhythmicity – Rhythmic evaluation tool.
- Glassbrain – 3D and VR real-time brain activity visualization.
- Brain Body Trainer – Videogame to train people cognitively and physically at the same time.
- Leap DAT – Adaptation of an attention diagnostic tool using the leap motion.
- Oculus DAT – Virtual reality distributed attention trainer.
- More at <https://neuroscape.ucsf.edu/technology/>

Company name UCSF – Neuroscape (previously Gazzaley Lab), Dept. of Neurology

Dates October 2012 – June 2013
Role **Freelance multimedia developer**
Jobs done Multimedia prototypes with Aegis Audiovisuals for a museum production company:

- Interactive project mapping with Kinect and unity3D
- Augmented reality guides with artoolkit

Web programming and technical support for Bet Gay
Self training with Kinect SDK, unity3D, vvvv, reaktor, madmapper, resolume

Company name Aegis Audiovisuals
Bet Gay

Dates March 2012 – May 2012
Role **Freelance web analyst and developer**
Jobs done Development of a Q&A platform for phone operators
Company name Bet Gay

Dates April 2006 – March 2012
Role **Web project manager / multimedia developer**
Jobs done Interactive multimedia development with c#, c++, opencv, flash, vvvv or Unity using projectors, kinect motion capture, arduinos, wiimotes and sensors for art installations, museums and faires.

Analysis, budgeting, database design and project management of web projects with teams of up to 6 programmers.

Company name	Twentic
Dates	September 2005 – April 2006
Role	Freelance Java developer
Jobs done	Development of software for live philatelic auctions, order tracking, reports, invoice generation...
Company name and contact	Twentic

Dates	2002 – 2004
Role	Various internships as a developer
Jobs done	Both internal (in university) an external (at companies) internships as developer. Mostly web-related in a variety of programming languages.

Education & workshops

2020	Fabacademy - Learn to make almost anything. 3d printing, laser cutting, electronics design, sensors...
2016	AR Programming for the Meta2 glasses at META
2015	Introduction to CUDA at Nvidia GTC Python – Self taught
2013	Interactive projection mapping with Unity3D (10h.) Introduction to Supercollider (4h.) Introduction to Structure Synth (4h.) Development of augmented reality applications (10h.)
2012	Introduction to projection mapping (6h.)
2010	Management and development of large interactive installations at emotique.com (20h.)
2001 - 2004	Superior multimedia engineering studies (masters equivalent) at La Salle Engineering and Architecture, Ramon Llull University, Barcelona. Completed except for the final project.
1997 - 2001	Multimedia engineering degree at La Salle Engineering and Architecture, Ramon Llull University, Barcelona. Final thesis: I-shadows. An interactive installation where the user's shadow on a projection played sounds with effects depending on its position and affected the colors being projected. Developed using c++/directx and macromedia director.

Skills

Native languages **Catalan and Spanish**

Other languages **English** - High, professional experience
French - Intermediate, written and spoken. (self learnt with stays in France)
Italian – Basic, written and spoken. (4 years at high school)

Strong points

- Extreme motivation for multimedia, out-of-the-screen projects. Big interactive installations, electronic art, immersive spaces, VR and AR.
- Quick prototyping capabilities
- Experience with integration of biosensors(HR, GSR, BT) into audiovisual projects.
- Creative person, able to find different solutions to one problem and with a taste for design.
- Ability to participate not only in the technical part of the projects but also in the artistic concept behind it, and/or to be a bridge between the two parts.
- Strong self-learning abilities and fast, practical adaptability to new APIs, SDKs, hardware gadgets...

Technical skills

- Expertise with Unity Game Engine in game development, data visualization and VR/AR technologies.
- Programming experience with C#, C/C++, vvvv, java, python, php, html5, javascript, css, mysql. See related projects below.
- Experience with Ableton Live, OpenCV, Kinect SDK, Arduino, Biosensors and various maker softwares
- Project analysis, budgeting, prototyping and wireframing.
- Database design.
- Good knowledge of Adobe Photoshop for image manipulation and Adobe Premiere for video editing.

Addendum

Selected projects

Name	<i>Coherence</i>
Description	Music rhythm training video game for Ipad and Oculus Quest, with all the ingredients that Neuroscape usually adds: Adaptivity, game tracking and data saving. The idea is similar to guitar hero or rock band but based on repetitive rhythms instead of tunes and with one novel key scenario where participants have to play the rhythms they learned without seeing any cues (thus using the inner rhythm of the songs)
Role	Design, Analysis, development and music editing/production
Name	<i>Engage</i>
Description	Engage is an ipad videogame, target at teenagers, that aims to teach kids how to make better decisions in life through training both delayed gratification and mindfulness. Through adaptive algorithms, the game challenges the player constantly and takes them from a rich visually appealing world to a mysterious dark mode where they can only progress through being super concentrated.
Role	Design, Analysis and development
Name	<i>BBT</i>
Description	BBT is a cognitive and physical enhancement videogame developed with Unity3D and Kinect2. The hypothesis, based on previous research that physical activity improves cognitive performance, was to see if by yoking physical activity with the interaction needed to respond to a cognitive enhancement videogame, the gains would be bigger than by just playing the videogame alone. Early analysis of the results showed that participants improved both physically and cognitively and now a new study targeted on kids and older adults is undergoing.
Role	Design, Analysis and development
Name	<i>Glassbrain</i>
Description	The glassbrain is a 3d visualizer for real time eeg source localized brain activity. I handled the visualization part, receiving a stream of data from the processing part and rendering the activity and 3d structures in Unity3D, as well as adding interaction via an xbox controller that allows the user to toggle different frequencies and fly through and around the brain. The project was also ported to the oculus rift for a more immersive experience. It was featured in many places including: <ul style="list-style-type: none">- Wired: http://www.wired.co.uk/news/archive/2014-03/20/glass-brain- National geographic: http://phenomena.nationalgeographic.com/2014/03/19/flying-through-inner-space/
Role	See video here: http://www.youtube.com/watch?v=dAIQeTeMJ-I Analysis and development of the visualization
Name	112
Description	Multiplayer game based on the simulation of the whole process of an emergency step by step, from the first witness to its resolution, where every player was in charge of a task and they all had to cooperate to solve it. The whole game was centered in Catalunya with a huge desk made of 9 40" LCD screens facing up where a 3072*2304 google map of the territory was shown. In the setup phase, the team would choose where they were willing to play and the map centered and zoomed on that position. The players controlled their task forces (police, firefighters, ambulance etc..) with 8 touch screens placed around the desk, and an extra vertical LCD showed information on what was going on along with scoreboards. A 5.1 sound system played the sounds all around the central game desk with the FMOD API.
Role	Project analysis, budgeting, prototyping and programming along with managing another co-worker.

Name	Fitur
Description	<p>Project made for the tourism department of the Catalunya government for the annual tourism fair of Spain in Madrid.</p> <p>Immersive experience where the user took the role of a bird and had to fly around a 3D photorealistic map of Catalunya (like google earth but with bigger resolution and detail). The space was a dark room with a 3-part area projection creating a semicircular screen of around 6x2meters using short-throw projectors. The user had to stay in the middle of the room and make bird-like movements with his arms as wings to fly around, turn, and gain or lose altitude. A simple webcam captured the user movements and processed the arms gestures using OpenCV libraries. A 5.1 sound system with speakers around the room complemented the experience with sound effects.</p>
Role	Project analysis, budgeting, prototyping and programming along with managing 2 co-workers.
Name	Serra d'Irta
Description	<p>Similar to the Project above but now centered in the area of natural park near Valencia. In this case the room was an open space and the fly around was made using a wiimote with its accelerometers. The wiimote was disguised as a small bird and the user would fly through the natural park by moving the bird around.</p>
Role	Project analysis, budgeting, prototyping and programming along with managing another co-worker.
Name	TToca
Description	<p>Multi user contributed video jockey system based on youtube and vimeo videos.</p> <p>In this project the users had to send an SMS to a certain number and the system reads them, splits them in minor meaningful parts, and launched a search on youtube and vimeo with the selected tokens. Then the system downloaded the videos and put them all in a cue to be played. When played, the videos would sometimes be merged with other similar ones and have random effects, shapes and masks applied as well. The project was made for a post inauguration party at the Apolo club in Barcelona</p>
Role	Project analysis, budgeting, prototyping and programming along with managing another co-worker.
Name	L'art ets tu
Description	<p>This Project was made for the 10th anniversary of Caixaforum, an art gallery in Barcelona. The idea was to take one famous artist whose work was exhibited for each year, and let the users become part of their pieces.</p> <p>In a long, dark hall, with a huge projection area, two chroma key booths where placed for the users to interact. The system in each booth consisted of a touch screen with onscreen step by step instructions and a high resolution web cam. Once the user had chosen an artist, the on-screen instructions would suggest a pose and took a picture. Then some filters were applied to the picture to make it look like the chosen artist pieces and some parameters allowed the user to fine tune their resulting pictures. Once saved the picture was sent to the users email if he provided one and shown in the big projection area outside in the hall.</p>
Role	Planning, budgeting, and analysis with a co-worker and image processing programming, interaction design and database design.