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Summary

I was born in Greece in 1989 and studied Electrical and Computer Engineering at Technical University of Crete (TUC) where I was taught the complete spectrum of how a computer operates. From transistors to the cpu and from Operating Systems to the highest level programming languages. Software development proved to be my choice of a profession and specifically web development. My graduation thesis was a challenge chosen by me : Build a web application that combined the WebGL API with the Web Audio API to create an immersive Graphic-Audio experience for the user.

I have a deep experience with the full stack but a very special relationship with Computer Graphics, WebGL and Web Audio API. My aim is to grow towards both directions and be a well rounded programmer with a specialty in graphics/audio.

Education

Technical University of Crete (TUC)

I got a Master of Engineering (M.Eng.) and a Bachelor of Science (BS): Computer Engineering at Technical University of Crete in Greece. Physics, mathematics, hardware, software, telecommunications were the main focuses through my studies. I was font of software because it was letting me express my creativity and create something useful, educational and many times entertaining. During my studies I developed various projects in assembly, C, Java, Matlab, a major social media application (Java, HTML, CSS, Javascript, MySQL full stack developer), SQL, a medium-size WebGL game and a major WebGL / WebAudio / HTML / CSS application for my graduation thesis.

Classes I took related to software development :

- Introduction to C programming
- Structured Programming
- Object Oriented Programming (Java)
- Digital Computers (assembly)
- Data and File Structures (java)
- Operating Systems (c,java)
- Digital Signal Processing (matlab)
- Databases (MySQL, SQL)
- Computer Organization (implemented CPU with VHDL)
- Algorithms and Complexity
- Computer Networks
- Web Application Development (Javascript, HTML, CSS, XML, JSON, Java, JSP, MySQL)
- Graphics (HTML, CSS, javascript, WebGL)
- Graduation thesis (three.js/WebGL, javascript, HTML5/CSS3)

Experience

In the university

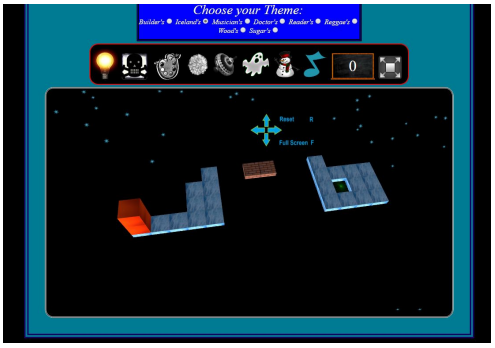
I will mention only software projects that are related to software development :

- MIPS assembly implementations

- Various matlab projects (image processing etc)
- Various applications in Java (included a web server from scratch)
- Various applications in C (included a web server from scratch)
- Major social media application ituned.com (full stack : MySQL Database, Java Server, JSP, HTML/CSS and Javascript, XML/JSON)

Screenshot of ituned.com

- Pure WebGL application (Bloxorz Game)



Screenshot of Bloxorz Game

Professionally

Chief Technology Officer @TFOJ

Remotely 2018 - now

With the Future Of Jewelry (TFOJ) products you can create your own unique and fully customized ring for you or your special ones. It uses WebGL in order to enable the user design, customize and order personalized jewelry inside a 3D environment. I was responsible for designing the architecture of the front end as well as for the WebGL optimization, leading a team of 4 developers and 1 3d artist.

I made my goal to build an agile team of developers that would try to follow the best methodologies both for managing our development process and for coding.

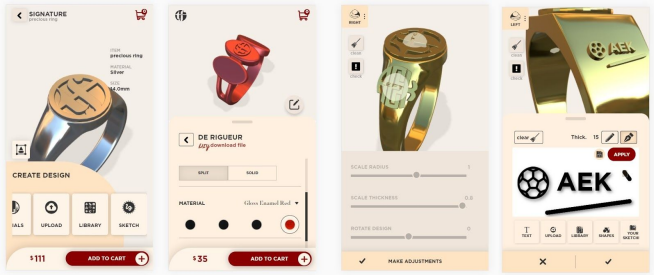
I used the SCRUM framework and the below practices with my team :

1. 2-week sprints
2. Sprint planning
3. Sprint review
4. Daily morning meetings
5. Pair programming when needed
6. Jira as our platform
7. Automated building
8. Automated tests

9. TDD
10. QA each other's jira tickets
11. 2-hour code reviews with the whole team every friday
12. AWS tools for the back end
13. Debug using the three.js developer tools extension
14. Debug using rStats.js
15. Debug using Chrome's Lighthouse (coverage, performance, seo etc)
16. Debug using Chrome's dev tools (heap snapshot, profiling etc)

Features I have implemented on this role

- Observer, Module, Facade, Mediator design patterns (PubSub, requireJS, redux, various module patterns)
- 3D model editing (3ds max), converting and compressing to Draco GLTF
- Normal map texture baking and importing to three.js
- Progressive loading of big models
- Mesh thickness calculator on the fly
- 3D Model simplification
- Realistic lighting and material using env maps (gold, silver etc)
- STL generation on the fly
- 3D geometry generation from 2D images
- 3D model manipulation and generation on the back end (NodeJS)
- Redux.js for managing app's state
- Single command builds using GRUNT as task runner and the packages : eslint, requirejs, strip_code, obfuscator, uglify, uncss, cssmin, processhtml, htmlmin, imagemin
- Automated testing using Grunt and Mocha-Chai and karma
- TDD using Mocha-Chai and karma



screenshots of customizer @tfoj (mobile version)

WebGL Developer @Proximie

Remotely 2016 - 2019

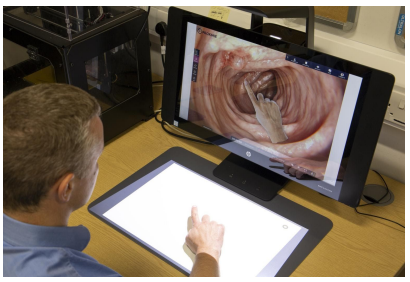
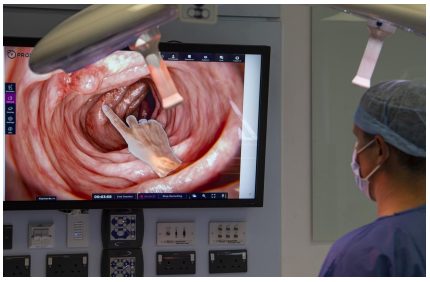
Proximie provides a platform for live-streaming surgeries with the participation of remote doctors and students. Doctors can use surgical 3D tools, create annotations, use their actual hand to assist in the surgery (all of the previous are overlaid over the surgery video). I am in charge of building the AR layers, video processing, 3D object overlaying, 2D annotations and the live-streaming capabilities (front end). I work remotely as a Web Graphics Engineer.

Features I have implemented on this role

- Augmented Reality - remote doctor hand. I used image processing (custom shader programs in GLSL) on the fly in order to subtract the remote doctor's

background and let only his hand be streamed. Then I overlaid it on the local doctor's surgery camera feed.

- Overlay movable and rotatable 3d surgical tools over the surgery feed
- Make annotations over surgery feed using 3d surgery tools (created a full annotation editing panel with thickness, color, eraser, undo redo etc)
- Record all video feeds and annotations and replay them at any time later in a library.
- 3D visualization of a point cloud of a depth camera inside the surgery room
- Used https://janus.conf.meetecho.com/ in order to implement a live video conference for over 100 users simultaneously.

screenshots of proximie

WebGL Developer @Nuclear and research Institute of Sao Paolo

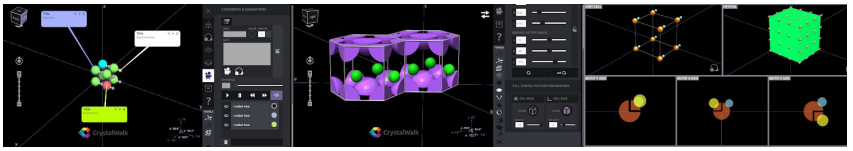
Freelance 2014 - 2016

In a team managed by Fernando Bardella I was the principle developer and together we developed an application for crystal visualization in the browser. WebGL/threeJS, 3D printing, Oculus Rift, Google Cardboard, Stereoscopic Rendering, Leap Motion, Custom Shading and various other features were developed mostly by me through our long cooperation.

Features I have implemented on this role

- VR implementations (Oculus Rift, Google Cardboard, Stereoscopic effects)
- Motion controller implementations (Leap Motion)
- 3D printing (custom export STL file etc)
- 3D spatial sound (Using the new Web Audio API)
- CSG implementation to generate final crystal object
- Position geometric shapes using transformation matrices
- Find colliding sphere cases and reposition them using euclidean geometry
- Implemented 5 view screen using 5 THREE cameras and 2 THREE scenes
- Implemented mouse picking objects
- HMTL/CSS3 UI
- Tour (guide) with steps, so the user to understand how the site works
- Level Of Detail feature

- Custom navigation cube (view box)
- Full store/restore application state (using MongoDB)
- Complex camera animations
- 2d html/css comment panel connected to 3d scene objects
- HTML x,y,z axes labels that adjust themselves after camera movement



screenshots of crystalwalk

You can see it live at **crystalwalk.herokuapp.com**

WebGL Developer @Technical University of Crete, Greece

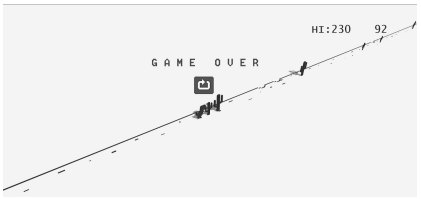
Freelance 2013 - 2014

Major WebGL/threeJS - Web Audio application (thesis which became my profession project afterwards). You can see it live at **looparound.xyz.** Through this app the user is able to interact with the objects in the 3D scene, activate their animations, produce sounds by hitting them and finally create audio loops that play back forever via the 2D sequencer at the top of the screen!

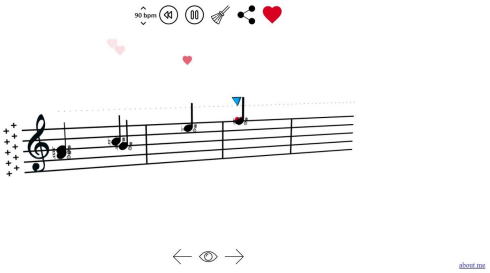
screenshots of looparound

Projects I did on my free time

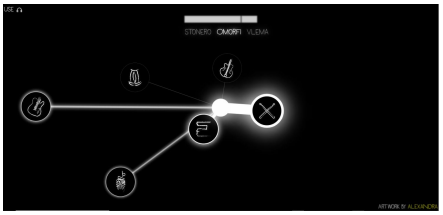
- Google3Dtrex. 3D Google T-rex Google's offline 2D game developed as3D game with camera manipulation by the user. Fast collision detection, animations and track with obstacles that are spawn at 60 FPS!



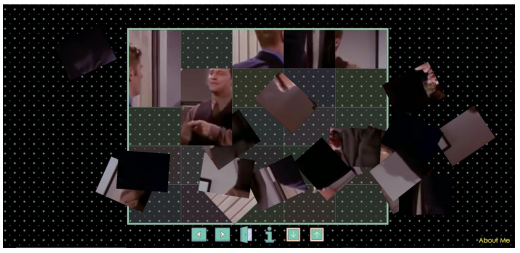
- Pentagram3D. A pentagram in 3D that implements many features of the pentagram in paper!



- MixItLive. MixItLive is an audio processing app for visualization and manipulation of audio streams. The user is able to mix a song as it plays by changing the panning and the gain of the instruments of the song. Each instrument is represented by icons that a user can move. Web Audio Api and canvas were used.

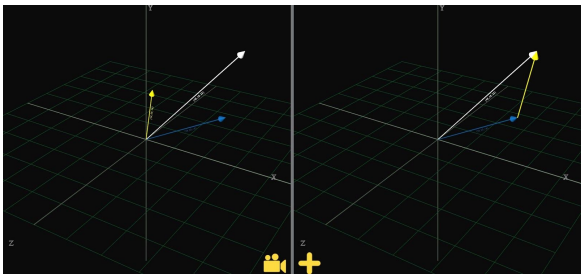


- VideoPuzzle. Put the pieces of the puzzle in their right position in order to see the video playing. Canvas and drawImage() were used.



- Stagona01. Stagona01 is a website for a band that features WebGL water and interaction with the user by clicking on it. Content about the band is appearing by clicking on specific parts of the image that is rendered under the WebGL water. The water shaders were based on goo.gl/Qrq8SH made by Evan Wallace.

- Vecalc. Vecalc is a website for visualizing and animating 3d vector calculations so a young student can understand these concepts more easily.



Skills

- Team lead
- Set up complete dev environment from scratch
- Javascript, javascript design patterns, javascript architecture and coding style
- WebGL
- Linear Algebra
- Shader programming in GLSL
- Three.js
- AWS
- Node.js
- Grunt
- TDD - Mocha, chai
- Application architecture and design patterns
- M.E.A.N. stack
- HTML5/CSS3
- MySQL
- PHP
- Apache servers
- Java
- C
- Assembly
- Matlab

Career aims

My aim is to always improve, learn and be productive. This involves constant changing, growing and adjusting. A developer must not fear change but he must even chase it and embrace it. Not changing means getting left behind because the development universe is evolving fast.

I also aim to be a more complete full stack developer in the future. I already know all the technologies and concepts a whole web application is built with and I just wish to improve my skills in these areas more.

Also, I wish to maintain my loving relationship with WebGL and in general with computer graphics, and with web audio. I love developing apps using these technologies because they give me huge inspiration, motivation and challenge to build something useful but also beautiful and imaginative.

References

Fernando Bardella, PhD IT Executive & Innovation Leader

Fernando Bardella managed Thanos directly @Nuclear and research Institute of Sao Paolo

"Mr. Saringelos is among the most talented professionals I've ever worked with. He's a prolific coder and a computer graphics expert. Always striving to reach the best denominator for our research and the production team, Mr. Saringelos always goes the extra mile to make sure he delivered nothing less than the best. I value our friendship and what I've learned from him very much indeed."

Talal Ali Ahmad, CEO of Proximie

Talal Ali Ahmad managed Thanos directly @Proximie

I had the privilege to work with Thanos. Thanos did an exceptional job on his software development projects. Always creative to come up with solutions for any problem we faced. Thanos is a very productive person and is a multi-skilled person with vast knowledge in his field. Thanos is a proactive, self-motivated and intelligent team player.

Thank you