

JUAN MUÑOZ-ARANGO

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EDUCATION

PhD Integrated Computing: Design and development of a cost effective multi-user VR system with lenticular lenses. • UA Little Rock, USA. 2015-2019-July

Bachelor Systems Engineering • Universidad EAFIT, Colombia. 2004-2009

PUBLICATIONS AND AWARDS

- Physical space performance mapping for lenticular lenses - CGI 19
- Design & architecture of a multi-user VR system with lenticular lenses - Salento AVR
- Pixel spread correlation with lenticular lens efficiency on multi-user VR displays - WSCG19
- Maximizing lenticular lens performance on multi-user VR displays - Laval 19
- Multi-user display systems, compendium of the state of the art - E.I 19
- POTELE: Low cost realtime virtual pottery simulator - Laval 16
- Won Leap Motion community choice award in 2015 with POTELE.[Link]

WORK HISTORY

Emerging Analytics Center, UA Little Rock - Little Rock, Arkansas. (August 2015 - present)
Software Engineer (Research Assistant)

- Developed a tool for calculating the best lenticular lens parameters for multi-user VR systems. From this several methods were discovered for maximizing lenticular lens efficiency.
- Researching SLAM methods for designing cost effective 3D tracking systems for low-cost VR.
- Developed visualizations for big datasets and procedural generated content. [Link],[Link]
- Created Potel: Pottery creator for tangible art (Leap motion community choice winner 2015). [Link]
- In general guided students and helping out in internal projects in the lab.
- Created the Spider: SteamVR tracker for stereo glasses. [Link]

Landmark Computer Graphics Halliburton R&D - Houston, Texas (Summer 2017, 2018)
Software Engineer

- Helped geo-physicists generate better models of the subsurface by developing procedural mesh deformation systems for modifying geo shells on VR/AR.
- Wrote a framework for adding more tools for manipulating meshes in their software.
- Helped small groups collaborate regardless of their physical location by developing a server that synchronizes geophysics datasets regardless the hardware used.
- Helped their software display their 3D content in VR/AR/Mobile/Standalone spaces concurrently.
- Wrote a framework to manipulate their software from the collaborative space.

Meta - Redwood city, California (Summer 2016)
Software Engineer (Demo team)

- Developed demos with networked Meta headsets for HCI proof of concepts for potential investors.
- Worked with hardware & software developers to use latest beta APIs for the prototype headsets
- At the end, the team presented a demo that had three parts: An AR hand interactive experience, an augmented shoe testing app and a collaborative "Paint" app with skype-like holograms.

PencilSquare - Medellin, Colombia (August 2014 - August 2015)
Software Engineer (Consultant)

- As a Unity3D consultant I helped with a simulator for dam design, developed a parser to transform several GB of vertex data to a couple KB and developed a web visualization for the dam data.
- Ported the Input system for Samsung TV for Nitro Chimp. [Link]
- Helped on Dreamfall Chapters with mouse interfacing on Linux, Mac and Windows. [Link]

SAE/MiddleSex University - Dubai, United Arab Emirates (February 2013 - August 2014)
Lecturer (Computer Graphics)

- Developed a new games programming track for SAE Dubai. Among the courses offered I taught computer graphics, game physics, algorithms 1 and 2 and game programming courses.
- Researched different optimization techniques in Unity3D and guided students with their projects (Some of them made it on Steam greenlight when it was competitive).

IVD DilBrands - Santiago, Chile (February 2011 - February 2013)

Lead Software Engineer

- Lead engineer of IVD3, a software that measures people reactions in immersive virtual spaces. By using biometric sensors we measured brand visibility, and later; effectiveness of safety mechanisms in training environments.
- In the time at IVD, I also developed a “layout importer” and “product organizer” tool to reduce the manual work for creating virtual environments from weeks to hours [Link].

Unity Technologies - Copenhagen, Denmark (July 2009 - January 2011)

Documentation Engineer

- Created tools for optimizing the documentation creation workflow. I wrote a documentation build system and a compiler to automatically convert JavaScript examples into C# for the exposed docs.
- Among several tasks I was in charge of the debugger testing and worked on creating examples for new features, tutorials and keeping the documentation up-to-date. The per-platform docs organization that is currently used was one of my developments.

C2EStudio - Medellin, Colombia (July 2008 - May 2009)

Software Engineer

- Created a “whac a mole” game and a “Guitar hero” clone for a local band in Unity3D.
- Developed the score, input and physics system for Project Cloudwitch (Unity Awards 2008). [Link]
- Developed a cloth simulation tool and a tech demo for simulating water surfaces in Unity3D.

AR/VR Lab Universidad EAFIT - Medellin, Colombia (August 2006 - December 2007)

Research Assistant

- Developed a physics model and a collision detection system for a laparoscopic surgery simulator.
- A paper was produced and published in a local conference for this system.

OPEN SOURCE AND PERSONAL PROJECTS

- **ProDrawCall optimizer:** Reduce draw calls automatically on Unity3D (All platforms). [Link]
- **ProMaterialCombiner:** Automatically combine multiple materials. (All platforms). [Link]
- **Where’s my daughter:** Global Game Jam 2016 entry. [Link]
- **Open Match-3:** Developed for Unity3D [Link] Source [Link]
- **ProPivotModifier:** Multithreaded tool for modifying pivots in meshes. [Link]
- **SRT Translate:** Tool for translating automatically .srt subtitles. Source: [Link]
- **ProMouse:** Mouse wrapper for Windows/Linux/Mac operating systems for Unity3D. [Link]
- **ProPrimitives:** Parametric primitive generator tool for Unity3D. [Link]
- **PS3Print:** Console renderer for PS3 (used in the Unity3D Wii player). [Link] - Source: [Link]
- **Space invaders:** Clone developed in C++ using SMFL. [Link] - Source: [Link]
- **Let Em Down:** Physics puzzle game for the iPhone. [Link]

SKILLS

- Familiar Emacs, GNU/Linux, MS Windows, Mac OS X, C++, Python.
- Proficient in software development using C#, Unity3D, Photoshop.