

Jorge Muñoz

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Personal statement

I am a Deep Learning Researcher & Engineer. I started my career in Artificial Intelligence with my degree in Computer Science Engineering, which I graduated with first-class honors in 2006. I continued my education with a Ph.D. in Artificial Intelligence and an MBA. I have worked mostly with startups from San Francisco, London and Madrid. Only on remote roles since 2015.

I base my work methodology in 2 principles: keep learning and improve the processes. That is why I spend a lot of time reading and understanding the latest papers in Deep Learning and why I always try to automatize repetitive tasks and define clearly any process.

Education

October 2020 –
July 2024 (estimated) Degree in **Mathematics**. UNED

October 2011 –
November 2012 **MBA** Part-Time at EOI (Escuela de Organización Industrial) Management School. Funded by EOI (see awards and prizes below). International stay at UCF for a week.

October 2008 –
October 2011 **Ph.D. in Computer Science and Artificial Intelligence**. Imitation learning in video games and development of believable non-players characters. I was the main author of several published **papers** in international congress about **computational intelligence** in games (CIG 2009, CIG 2010, UKCI 2010).

I won the botprize in 2010 (Turing Test for videogames) with a Conscious Machine cognitive architecture. An AAA videogame company was interested in the technology. I tried to create a company (Comaware) with this technology.

October 2007 –
September 2008 **Master** in Computer Science and Information Technology. Specialization: **Artificial Intelligence**. University Carlos III of Madrid. Funded by the university. My thesis was about using Artificial Intelligence for step-by-step resolution of linear equations.

October 2001 –
November 2006 **Computer Science Engineering** (5 years career). Specialization: Artificial Intelligence. I graduated with **first-class honors** and **the best bachelor's thesis**. University Carlos III of Madrid.

Experience

January 2020 –
now

Freelance Deep Learning Engineer/Researcher. Some example of projects for different clients all over the world:

- Full prototype of a service to replace of real faces of people in images by fake faces generated with **GANs**.
- Models to predict of stock prices using **wavelets, transformers, sequence to sequence models** among other things.

Keywords: Deep Learning, GANs, NLP, TensorFlow

May 2018 –
January 2020

Founder at Serendeepia (Madrid)

In Serendeepia Research we were a small group of experts in Machine Learning and Deep Learning who built custom solutions based on state of the art research in Artificial Intelligence.

I was **CEO** and **CTO** of the company. I created a remote-first culture with a well defined methodology to manage the projects: scrum and kanban boards. I picked our tools based on the best industry standards: Github with gitflow workflow for code, Kubernetes as cluster with Jenkins for continuous integration and Polyaxon as the platform to run experiments. I grew the company from 3 to 7 people, I managed successful projects for Fortune 500 companies and I lead the development of B2C products with the latest advancements in Deep Learning.

Keywords: Deep Learning, CEO, CTO, TensorFlow, Scrum, Kubernetes, Jenkins, Polyaxon

January 2016 –
August 2018

Remote Machine Learning Engineer/Researcher at Chute (San Francisco, CA, USA) (Acquired in August 2018).

I was the only engineer in charge of processing the data from social networks (Instagram, Twitter) in real-time to create valuable insights.

I migrated the simple single label image classification model in Caffe to a multilabel model in TensorFlow with TensorFlow Serving. The new model had more labels (+100) and a better precision and recall for every class (>90% accuracy for most of them). I also established a scientific procedure to measure the quality of the models.

I increased the competitive advantage of our product with 2 new features:

- An aesthetic model which was able to score the beauty of the images with a state of the art CNN model.
- A model to create a perceptual hash of images using their local and semantic information which was used to find similar images.

Keywords: TensorFlow, TensorFlow Serving, Python, Convolutional neural networks, Deep Learning

June 2017 –
April 2018

Remote contractor as Machine Learning Researcher at Good AI Lab (San Jose, CA, USA).

I was in charge to create **Deep Learning** research projects that run in ClusterOne for promoting and testing the platform. For example:

<https://medium.com/clusterone/personalized-medicine-redefining-cancer-treatment-with-deep-learning-f6c64a366fff>

Keywords: Deep Learning Research, Machine Learning Platform

- March 2013 – September 2017 **Android lead developer** in startups in **London** (Quipper, Shopcade) and as a **remote contractor** (Appgree).
- I lead the development of several Android mobile apps, most of them with more than a million downloads. I also trained the teams who took on the development of the apps when I left.
- Keywords: Team Lead, Android, Java, Kotlin*
- December 2010 – February 2013 **Entrepreneur period.** Startups and side projects with colleagues:
- Comaware: new technology based on **Machine Consciousness** to control virtual characters in video games and autonomous robots.
 - Howmaths: Artificial Intelligence applied to math problems. An A* algorithms applied to solve math equation systems.
 - A video game engine for Android developed from scratch as a side project to use Artificial Intelligence to control the non-player characters and procedural content generation.
- Keywords: Entrepreneur, Marketing, Android, Video Games, Java, C++*
- September 2009 – January 2010 Visiting **research** at "**Center for Computer Games Research**" **IT University of Copenhagen** (Denmark), group of **Artificial Intelligence** in video games. I worked in a project of controlling characters in video games throw an eye tracking system and neural networks.
- Keywords: Recurrent Neural Networks, C++*
- October 2007 – September 2011 **Research staff** in training at **University Carlos III of Madrid**. I supervised several bachelor's thesis related with Artificial Intelligence and video games.
- I was rated by the students as an exceptional teacher (2008).
- Keywords: Neural Networks, Java, C++*
- December 2006 – August 2007 Software developer in Spain in several companies: GTD Ingeniería de Sistemas y Software; Secosol soluciones y domótica.

Research & Publications

Several **papers** in international conferences and **book chapters** (see <http://scholar.google.es/citations?hl=es&user=aHsYF-0AAAAJ> for more details).

Participation in scientific committee of international conferences (GECCO 2011, IADIS 2009).

Complete list of publications publications: <https://jorgemf.github.io/publications.html>

Awards and prizes

2011	<p>Winner team of the Human-Like Bot contest.</p> <p>Winner project (Comaware) in the national contest for university entrepreneurs organized by EOI. Awarded with an MBA at EOI and a study trip to Silicon Valley.</p> <p>Winner team of the 5th contests of ideas for creating scientific and technological based companies of the University Carlos III of Madrid with the project Comaware. We won six months of incubation in the business incubator of University Carlos III of Madrid.</p>
2010	<p>Winner team of the 2K BotPrize 2010 international contest. The 2K BotPrize is an adaptation of the Turing test to video games. Monetary prize of a \$2,000 and a trip to 2K studios in Canberra, Australia.</p> <p>Winner of the Car Set-up Optimization competition (using TORCS as simulator). \$500 prize.</p>
2008	Rated by the students as an exceptional teacher, congratulated by the University Carlos III of Madrid
2006	Graduated with first-class honours and best bachelor's thesis . 2006
2005	Scholarship for outstanding academic achievement in the course 2005-2006.
1999 and 1998	Finalist in the third edition of the national " Spring Mathematics Contest " held at the University Complutense of Madrid.

Media Appearances

October 2010	<p>"Killer Bots Are Getting Human". John Bohannon. Science. Vol 330. no. 6000. pp. 30-31. Science.</p> <p>http://science.sciencemag.org/content/330/6000/30.2</p>
October 2010	<p>"The Awakening of Conscious Bots: Inside the Mind of the 2K BotPrize 2010 Winner", aigamedev.com.</p> <p>http://aigamedev.com/open/articles/conscious-bot/</p>
September 2010	<p>"Unreal Tournament 2010: Narrowing the Gap between Human and Bot". Surfdaddy Orca. h+ magazine.</p> <p>http://hplusmagazine.com/2010/09/10/unreal-tournament-2010-narrowing-gap-between-human-and-bot/</p>
September 2010	<p>"Un equipo español queda en primer lugar del 2K BotPrize 2010" ("A Spanish team win the 2K BotPrize 2010"). Lektu / Microsiervos. lainformacion.com</p> <p>http://www.lainformacion.com/ciencia-y-tecnologia/tecnologia-general/un-equipo-espanol-queda-en-primer-lugar-del-2k-botprize-2010_eB2nYg5smd9hxIN2WnHWR1/</p>

Talks

March 2011

Guest speaker in the VI Days of Imaginática 2011. University of Sevilla. "*Conciencia Artificial en Videojuegos: diseñando máquinas más humanas*". ("Machine consciousness in video games: designing more human-like machines").

Idioms

Spanish

Native

English

Advanced (6.3/10 Duolingo Proficiency Exam, equivalent to 93/120 in TOEFL, 6.8/9 in IELTS or C1 in CEFR)