Tomás Berriel Martins

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Education

2015–2019 **Bachelor's Degree in Electronic and Automatic Engineering**, *University of Zaragoza*.

My bachelor's thesis, *Automated human actions recognition in 3D video sequences*, focused on the study of Long Short Term Memory neural networks for classification of RGB-D sequences of human actions.

2020 **Artificial Intelligence Fundamentals**, *ColumbiaX*, Edx.

Basic online course that I took during the 2020 COVID-19 lockdown, from February to May. It covers different Artificial Intelligence topics: informed and uninformed search; adversarial search and games; machine learning fundamentals; constraint satisfaction problems; reinforcement learning; and logical agents. The course did not gave me a deep understanding on the different fields, but was useful to get a grasp of the Artificial Intelligence topics outside Deep Learning.

2020–2022 **Master in Robotics Graphics and Computer Vision**, *University of Zaragoza*.

My master's thesis, *Learning disentangled representations of scenes from images*, studies the use of transfer learning as bias to reduce the computational cost of a of State of the Art model for unsupervised semantic disentanglement learning of 2D synthetic scenes.

2021–Today **Doctoral Program in Systems Engineering and Computer Science**, *University of Zaragoza*.

Currently, I am pursuing a Ph.D. under the supervision of Dr. Javier Civera. My research is focused on the field of representation learning, with special interest in disentanglement and causality.

Experience

2019–2020 **Robotic Engineer Intern**, *ITAinnova*, Zaragoza, Spain.

I was part of a multidisciplinary team that developed autonomous platforms for both indoor and outdoor environments. I helped developing and integrating software for different autonomous tasks; integrating perception algorithms to detect dynamic obstacles; developing documentation; and acting as support for the client.

2020–2021 **Research Assitant**, *Robotics, Perception and Real-Time Group*, University of Zaragoza.

I worked with Dr. Javier Civera on the use of Bayesian Neural Networks for uncertainty prediction in 360° images' layout estimation.

Languages

Spanish	Native
Italian	Advanced
English	Advanced

Knowledge Area

Programming	C++, Python, base knowledge of Git and Bash

ML   Supervised and Unsupervised Learning for Neural Networks, Variational Auto Encoders, Bayesian Neural Networks and Disentanglement Learning

About me

My main interest are Artificial Intelligence and the human brain. I am fascinated by how an ensemble of simple cells is able to give place to an organism with abstract ideas. I wonder if there is something special on this ensemble, that some people would call the Soul; or if with the appropriate program we would be able to create an artificial being of similar capabilities. I think that by studying how a brain works and how it relates with other brains, as we are social beings, we will be able to understand better how to create a program with similar capabilities.