R E F E R E N C E   L E T T E R

Coimbra, May 16th, 2025

To whom it may concern

My name is Nuno Gonçalves, and I am Tenured Assistant Professor of the University of Coimbra (Portugal), at the Department of Electrical and Computers Engineering, Senior Researcher of the Institute of Systems and Robotics – Coimbra at the Computer Vision Lab and Innovation Manager at the Portuguese Mint and Official Printing Office.

I concluded my PhD in 2008, and my research interests include Computer Vision and Artificial Intelligence, mainly related to biometrics, face imaging, authentication, secure Facial Recognition Systems, printer-proof steganography, geometry, robotics, computer graphics, medical imaging, plenoptic cameras, augmented reality, and also other fields.

João Tremoço joined my group in September 2020 to develop the work that conducted him to the Master's degree, in October 2021. João worked on the important problem of improving the performance of facial recognition algorithms based on the quality of portraits for ID and travel documents.

João did an outstanding research work, creating new algorithms and a quality-driven approach to the problem. His work was published in a small, yet very important conference of the topic – BIOSIG. João was always a dedicated student working very hard and with an extremely focused working method, which is rare in Master students.

During his studies, João Tremoço has always demonstrated high abilities to understand the mathematical complexity of the models involved in the research and to manipulate the fundamentals of the Deep Learning and Biometrics, while these concepts are no easy to understand due to their intrinsic abstract and technical nature. He has also demonstrated strong abilities in programming these concepts, searching for a trade-off solution and the associated algorithms to make them work and be effective.

More recently, I have been working with João Tremoço, in a collaboration between my research group and the company where João currently works, to the creation and dynamization of the Adversarial Attack Challenge to be help at the International Joint Conference on Biometrics, in Osaka, Japan, in September 2025. Almost 4 years have passed, and I noticed that João has considerably evolved as professional, still doing upfront Research and truly with enthusiasm about his work and new challenges.

From the exposed above, I believe that João Tremoço is a very strong candidate to work in industry and research in several topics.

With my best regards,

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Nuno Goncalves, PhD