



## Expert in Quantum Machine Learning

### ➤ DESCRIPTION

DAS PHOTONICS is a Spanish high-tech company, a leader in the development of innovative solutions, based on proprietary high-performance photonics technology, for the defence and space sectors. Being aware of the importance that **quantum technologies** can play in the future in these sectors, DAS PHOTONICS is currently exploring and investigating the potential opportunities that these technologies can offer, to improve its products. We are therefore actively seeking for candidates with a strong background in the field of **quantum machine learning** (QML). The selected candidate shall join the **CUCO Project** team, the first major quantum computing project at both a public and private collaboration project in Spain. The objective of DAS Photonics in CUCO is to develop novel QML algorithms that can be applied in the field of signal intelligence (SIGINT) for the classification and identification of RADAR and communications signals, and to analyse their potential to outperform algorithms based on classical artificial intelligence.

### ➤ MAIN RESPONSIBILITIES

- Explore and advance the state of the art of QML, identifying the necessary requirements to deploy this technique in the field of SIGINT, as well as the most suitable quantum approaches for this purpose.
- Analyse the advantages and disadvantages of the use of QML in SIGINT.
- Design algorithms based on *quantum neural networks (QNNs)* for the analysis of RADAR and communications signals, as well as their implementation, training and evaluation using *cloud computing* platforms.
- Participate in the elaboration of technical reports and project reports.

### ➤ QUALIFICATION REQUIREMENTS

- ✓ Hold a Master's degree in any engineering field, a Physics, or Mathematics with experience in QML (Note: it is recommended, but not mandatory, to hold a PhD in the field of QML or similar).
- ✓ Desirable: experience in the development of QNNs; experience in commercial QML-based algorithm development kits (e.g., IBM Qiskit, Amazon Braket...).
- ✓ Demonstrable experience in the field of quantum optics, preferably related to quantum communications (QRNG, QKD, quantum entanglement...) and/or quantum computing is an asset.
- ✓ English language spoken/written fluency and good communication skills.

DAS PHOTONICS offers a interesting project with duration of the contract subject to this but the possibility to continue



If interested, please, send us both your CV and a motivation letter to [rrhh@dasphotonics.com](mailto:rrhh@dasphotonics.com)