

THE UNIVERSITY OF MANCHESTER
PARTICULARS OF APPOINTMENT
FACULTY OF SCIENCE & ENGINEERING
SCHOOL OF ENGINEERING
DEPARTMENT OF ELECTRICAL AND ELECTRONIC ENGINEERING
RESEARCH ASSOCIATE IN IMAGE PROCESSING WITH MACHINE LEARNING
VACANCY REF: SAE-017029

Salary:	£32,816 to £40,322 per annum depending on relevant experience
Hours:	1 FTE
Duration:	Fixed term from 1 October 2021 until 31 July 2022
Location:	Sackville Street, Manchester

Enquiries about vacancy shortlisting and interviews:

Name: Fumie Costen.

Email: fumie.costen@manchester.ac.uk

BACKGROUND

An important application of Smart Agriculture is crop monitoring. Fruit bearing trees need close monitoring to detect early issues affecting the quality and quantity of their yield. In this project, the focus is on olive trees in Jordan. We aim at building low-cost prototypes of devices to perform the challenging task of pre-harvest monitoring of the olive crops/trees. For this task, our Jordanian partners Jordan University of Science and Technology will use drones to collect high resolution images of the olive trees in different olive orchards in Jordan, at different growth stages in order to estimate their healthiness and their readiness for harvesting. A Computer Vision (CV) system will be developed using state-of-the-art Machine Learning (ML) and Deep Learning (DL) models to process the collected images and produce real-time decisions/recommendations.

Overall Purpose of the Job

The purpose of this job is to build a ML/DL-based CV model for the classification of images of olive crops/trees into many classes related to the health of both the crops and trees and the ripeness of the crops and its readiness for harvesting.

Key Responsibilities, Accountabilities or Duties

The range of duties will include:

- production of a comprehensive literature survey,
- specification and management of multiple datasets,

- pre-processing of data,
- construction and testing of an accurate and efficient ML/DL model,
- simplification of the model such as model compression and quantisation,
- documentation and publication of the results of the research.

PERSON SPECIFICATION

Essential;

The list of qualifications for this job is as follows:

- 1- PhD (or equivalent) in Computer Science or related field using machine learning algorithms.
- 2- Several fully-reviewed publications in machine learning and/or computer vision as the first Author.
- 3- Proficiency in at least one scientific programming language (Fortran, python, C++).
- 4- Ability to translate theoretical concepts into algorithms.
- 5- Experience in deploying ML/DL models into embedded systems (desirable).