



Job offer for researchers, research technicians or research support officers under Chapter 6 allocation

Job offer

Title

56/2023 - Support on variational models combined with deep learning for merging images and the super-resolution of videos produced by satellites.

Main researcher

Name: Joan

Last name 1: Duran

Last name 2: Grimalt

Department: Department of Mathematical and Information Sciences

Contract details

Job description

The successful candidate will work on combining variational models and deep learning to merge images and the super-resolution of videos produced by earth observation satellites. Moreover, the method will be designed by considering that the resulting images and videos will be used to detect plastics in the Mediterranean. The specific goals are: i) designing a variational model to merge a panchromatic image and hyperspectral images by using neural networks for machine learning of the operators involved; ii) model adaptation for data produced by different satellites; iii) Qualitative and quantitative comparison; iv) Creating a model for improved resolution of videos produced by certain satellites, and v) validating models to detect plastics in merged satellite images.

Category: R1 - Technical staff

Qualification: High school (batxillerat) or higher VET diploma, or equivalent

Field of research: Mathematics

Subarea of research: -

Contract type details

Type of contract: Permanent **Full/Part-time:** Part-time **Hours per week:** 20

Work schedule: 09:00-13:00 (flexible hours according to tasks)

Application submission deadline

From Friday, March 31, 2023 until Monday, April 24, 2023

Planned start date: Monday, May 29, 2023

Planned end date of the tasks subject to the contract: Tuesday, May 28, 2024



Research project / Agreement

Type of activity: Project

Funding body: Proyecto de referencia TED2021-132644B-I00 financiado por MCIN/AEI /10.13039/501100011033 y por la Unión Europea NextGenerationEU/ PRTR.

Call: Projectes Estratègics Orientats a la Transició Ecològica i a la Transició Digital - FONS PRTR

Programme: Projectes Estratègics Orientats a la Transició Ecològica i a la Transició Digital

Reference number / Official code: TED2021-132644B-I00

Number of positions available: 1

Candidate requirements

Skills/Qualifications

Science or technology high school diploma.

Specific requirements

Advanced knowledge in convex optimisation, calculus of variations and advanced Python programming skills.

Language requirements

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Experience required: -

Prior experience

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Additional information

Monthly salary and benefits: 688,80 €

Selection process

In accordance with article 8 of REGULATORY AGREEMENT 145140 of 15th June 2022 that approves the regulation governing the recruitment of research staff under chapter 6 allocation of the university budget, as well as technical or operational research staff.

Selection criteria:

- Accomplishments in the field (max. 40 points)
- Qualifications in the specialised area (max. 20 points), other (max. 5 points)
- Video CV and, where applicable, a personal interview (max. 20 points)
- Experience in the field (max. 15 points), e.g.: > 3 years (10 points), < 3 years (5 points)
- Other merits (max. +5 points), e.g. letters of reference Eligibility threshold: 60 points.



Selection comitee

- i. The relevant Pro-Vice-Chancellor for research (or delegated representative) as chair.
- ii. The supervisor (or delegated representative).
- iii. The members of the Research Area Assessment Committee (CARAI).
- iv. One or more expert members in the topic pertaining to the recruitment and chosen by the chair of the committee, where applicable.
- v. The head of FORHU (or delegated representative), as secretary, who may speak but not vote.

Additional comments

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