Call for expression of interest for one (1) Post Doctoral position "Sparse Signal Processing and Deep Learning for Data Analysis" at the Institute of Computer Science (ICS) Foundation for Research and Technology – Hellas (FORTH)

Position: One (1) position for the HORIZON project TITAN

Project: “TITAN – Frugal Artificial Intelligence and Application in Astrophysics” (Grant Agreement number: 101086741) funded under HORIZON-WIDERA-2022-TALENTS-01

Desired starting date: July 1st, 2023

Duration: 1 year with yearly extensions for the project duration

Location: Heraklion, Crete, Greece

Opening date: 08/06/2023

Closing date: 19/06/2023

Ref.: “TITAN- Post Doctoral-signalprocessing”

Description.

Scientific instrumentation advancements have significantly impacted various fields, including astrophysics and Earth Observation, leading to remarkable discoveries. These advancements are largely due to the significant improvements in sensing, processing, and analysis capabilities, which have resulted in the availability of vast amounts of diverse observations. The Big Scientific Data paradigm aims to harness the potential of analyzing massive datasets while addressing the challenges associated with such analyses, particularly the need for human intervention. The HORIZON project “TITAN – Frugal Artificial Intelligence and Application in Astrophysics”, funded under HORIZON-WIDERA-2022-TALENTS-01 program, aspires to create innovative frameworks for addressing the challenges involved in analyzing observations from various sensing platforms, both terrestrial and spaceborne.
As part of the project, we are seeking one (1) Postdoctoral Researcher to investigate and develop state-of-the-art signal processing and machine learning algorithmic frameworks for the efficient analysis of high-dimensional, multi-source observations, focusing on the integration of data-driven models with physical constraints. The focus will be on the combined analysis of optical (e.g., EUCLID) and radio (e.g., SKA) signals for weak gravitational lensing detection and modeling systems, as well as adapting these systems to address problems in different domains, such as climate change studies.

The technical staff will be located at the premises of FORTH with a strong collaboration with the CosmoStat Laboratory at CEA Saclay. The staff will be supervised by Jean-Luc Starck (FORTH/CEA), Panagiotis Tsakalides (FORTH), and Grigorios Tsagkatakis (FORTH).

**Required qualifications:**
- Ph.D. in Computer Science, or a related field
- Experience in developing algorithms for high-dimensional signal modeling
- Experience working with Earth Observation and/or Astrophysical data
- Scientific publications in related fields
- Working experience in related European and/or National R&D projects
- Willingness and ability to work cooperatively within a team, to learn, and to adapt to the projects
- Physical presence at FORTH, Heraklion, Crete for the duration of the position
- Good knowledge of English
- Completed military service (if applicable)
- Letters of recommendation

**Desired qualifications:**
- Representation of the team/laboratory/institute at national and international levels
- Experience with state-of-the-art software libraries including Tensorflow/Pytorch and Tensorly

**Application Submission**
Interested candidates can submit their applications via [http://www.ics.forth.gr/jobs/en/](http://www.ics.forth.gr/jobs/en/) using the link **“Apply for the position”** under the announcement. Applications must include:
- Detailed CV, including qualifications and interests in the above areas and proof thereof
- Scanned copies of academic titles; academic transcripts for undergraduate and postgraduate degrees
- Letters of recommendation, detailed presentation of prior work, studies and/or publications, demonstrating knowledge of desired skills.

**Contact Information:**
For information and questions about the advertised position, the activity of the group or the Institute, please contact Jean-Luc Starck at jstarck@cea.fr and Panagiotis Tsakalides at tsakalid@ics.forth.gr.

**Selection procedure**
Applications will be evaluated by a 3-member committee headed by the ERA Chair, Dr. J-L. Starck, and they will be screened by the TITAN international scientific advisory board. In the case candidates are invited for an interview, they will either be invited to participate in person or via teleconference. Beyond scientific excellence, selection criteria will include gender and diversity aspects as well as complementary skills and fit of the candidate to the existing team.

**Selection Announcement**
The result of the selection will be announced on the website of ICS-FORTH. Candidates have the right to appeal the selection decision, by addressing their written objection to the ICS secretariat within five (5) days since the results announcement on the web. They also have the right to access (a) the files of the candidates as well as (b) the table of candidates’ scores (ranking of candidates results). All the above information related to the selection procedure will be available at the secretariat of ICS-FORTH in line with the Hellenic Data Protection Authority. Access to personal data of co-candidates shall be limited to personal data (and relevant
data) and supporting documents which have been the basis of the evaluation of the candidates for the specific post(s). Prior to the announcement of the personal data and/or documents of the co-candidates to the applicant, FORTH will inform the data subjects in an appropriate way.

Disclaimer

FORTH is compliant with all legal procedures for the processing of personal data as defined by the Regulation EU/2016/679 on the protection of natural persons with regard to the processing of personal data.

FORTH processes the personal data and relevant supporting documents that you have submitted to us. Processing of that data is carried out exclusively for the needs and purposes of this specific call. Such data shall not be transmitted to or communicated to any third party unless required by law.

FORTH retains the above data up to the announcement of the final results of the call, unless further process and reservation is required by law or for purposes of exercise, enforcement, prosecution of certain one’s legitimate legal rights’ as defined in the Regulation EU/2016/679 and/or in national law.

We inform you that under the Regulation EU/2016/679 you have the rights to be informed about your personal data, access to, rectification and erasure, restrictions of process and objection to as provided by applicable regulation and national laws.

We acknowledge also to you, that you have the right to file a complaint to the national Data Protection Authority. For any further information regarding exercise of your personal data protection rights, you may contact the Data Protection Officer at FORTH at dpo@admin.forth.gr.

You have the right to withdraw your application and consent for the processing of your personal data at any time. We inform you that, in this case, FORTH shall destroy such documents and/or supporting documents submitted and shall delete the related personal data.