Call for expression of interest for one (1) technical staff 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-tech_staff-signalprocessing”

Description.

Modern astrophysical research requires analysis of massive datasets due to the unprecedented volume of data generated by advanced telescopes and observational instruments, which capture detailed information on celestial objects and events. Analyzing these large datasets enables scientists to uncover the underlying patterns and structures in the universe, leading to breakthrough discoveries and a deeper understanding of fundamental astrophysical processes. The HORIZON project “TITAN – Frugal Artificial Intelligence and Application in Astrophysics”, funded under the HORIZON-WIDERA-2022-TALENTS-01 program aims to develop novel computational paradigms for astrophysical data analysis through the use of deep learning methods in high performance computing environments.
Within this project, we are seeking a highly skilled and passionate Software Developer to join our team focused on the development of cutting-edge High Performance Computing (HPC) solutions for astronomical data research. The successful candidate will be responsible for designing, implementing, and optimizing software to advance our understanding of the universe by analyzing large volumes of complex and diverse data. The responsibilities for this position include:

- Collaborate with astronomers, data scientists, and engineers to identify and understand computational challenges in astronomical research.
- Design, develop, and optimize HPC solutions tailored for processing and analyzing large datasets from astronomical observations and simulations.
- Implement parallel algorithms and data structures for efficient execution on multi-core, multi-node, and GPU-accelerated architectures.
- Test, validate, and document the developed software to ensure high quality and maintainability.

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:**

- BSc in Computer Science, or a related field
- Proficient (4+ years) in software programming including Matlab, C/C++, Python and Java, and version control.
- Experience with the analysis of astrophysical observations
- Knowledge of database systems including SQL and PostgreSQL
- Software technologies including expertise in programming embedded devices
- Experience in the design and deployment of machine learning systems
- Good Knowledge of English
- Excellent problem-solving skills, strong attention to detail, and ability to work both independently and collaboratively in a team.
- Physical presence at FORTH, Heraklion, Crete for the duration of the position

**Desired qualifications:**

- Data engineering certification (e.g. Data Engineer Certification)

**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.