Vacancy Notice

Internal Research Fellow in Artificial Intelligence

The European Space Agency's Advanced Concepts Team (www.esa.int/act) is looking for highly motivated young researchers in the field of artificial intelligence, with good analytical and communicational skills and an excellent aptitude for teamwork.

The Team

The Advanced Concepts Team (ACT) is a group of research fellows (post-docs) and young graduates who originate from a broad variety of academic fields and aim at an academic career. The team's task is to monitor, perform and foster research on advanced space systems, innovative concepts and working methods. It interacts externally almost exclusively with academia and operates as a truly interdisciplinary team bound to high scientific standards. Via its research, the team acts as a cross-departmental pathfinder to explore novel, potentially promising areas for ESA and the space sector, ranging from applied to basic fundamental topics. The team is in constant evolution and attempts to lead and embrace changes and new trends. Each member is therefore encouraged and expected to suggest and contribute changes also in the team.

Internally, the Advanced Concepts Team acts as the technical think-tank within Future Preparation and Strategic Studies Office. Thus, an important task of the team is to communicate scientific trends and results, as input to the strategic planning of the Agency.

The team has been active in the field of artificial intelligence since several years and interested candidates are invited to get familiar with these projects, while being encouraged to expand the domain to new interesting fields not yet covered.

Duties and tasks

Successful candidates will perform research in artificial intelligence and will in particular carry out the following tasks:

- Propose and perform high-level research in the field of artificial intelligence together with universities of ESA member States and cooperating States (in particular through the Ariadna programme).
- Assess and investigate concepts and novel theoretical methods in artificial intelligence for synergies with space systems.
- Lead and assist interdisciplinary projects with other ACT Research Fellows in topics where the above-mentioned areas of artificial intelligence play a role.
- Participate, with the rest of the team, in the assessment of proposed space system concepts - these not being restricted only to the artificial intelligence area - and propose new concepts and assessment studies.
- Perform and participate in small studies on subjects of strategic interest to provide in-house expertise.
- Follow and monitor the progress of research in areas of artificial intelligence of interest to the team in order to derive and report strategic trends.
- Propose and follow stage topics in areas of artificial intelligence of interest to the space sector.

- Actively communicate topics, problems, projects, trends and results in the field of artificial intelligence to expert and non-expert audiences.

Areas of research are partly chosen by the successful candidate based on his/her own expert judgements and insight into trends and developments in artificial intelligence, partly chosen by the team as to follow strategic directions of the Agency. Based on current assessments, ACT areas of research in artificial intelligence include swarm intelligence, multi-agent systems and agent-based simulations, evolutionary neural networks, adaptive control, probabilistic modelling, global optimisation, machine learning, dynamical systems, bio-inspired sensors and control mechanisms and brain machine interfaces, but these can be extended to other areas of interest to the space sector.

Qualifications

The candidate should hold a degree in Computer Science, Mathematics or Engineering. He or she should also have completed (or be about to complete) a PhD in Computer Science, Mathematics or Engineering, with the subject of the thesis being highly relevant to the description of the tasks outlined above, and should aim at an academic/research career. Good programming skills and experience with simulated environments or dedicated software are assets.

The candidate is expected to bring to the team functioning links to universities and research institutes. The candidate should demonstrate an interest in space science and / or technology as well as the ability and interest to get actively involved in prospective interdisciplinary research.

Applicants must be fluent in English and/or French, the working languages of the Agency. A good proficiency in English is required

Successful candidates are expected to show an aptitude to contextualise specialised areas of research and to quickly assess their potential with respect to other domains and applications. An avid, natural curiosity and a passion for new subjects and research areas are essential. As member of an interdisciplinary, multicultural team of peers, the candidate should have a natural aptitude to teamwork, while being able to set-up, follow, monitor and be responsible for his/her own personal research plans and directions. Good methodological and organisation skills are therefore a valuable asset.

Application

Information on the ESA Research Fellowship Programme and the application form are available at: http://www.esa.int/SPECIALS/Careers_at_ESA/SEMICLRTJRG_0.html . Applicants should send their CV, a covering letter stating their research interests and the filled-out RF application form to: act@esa.int as well as temp.htr@esa.int. (if not possible by email, the reference letters can also be sent via normal mail to: ESTEC HR Division, HFI-HTR, ESA/ESTEC; Keplerlaan 1, PO Box 299, 2200AG Noordwijk ZH, The Netherlands).

The general eligibility criteria of the ESA Research (Internal) Fellowship Programme apply.

All applications will be considered until the available post is filled. Application deadline for this round of interviews: no later than January 9, 2013. Typically the interview process will include a pre-interview by videoconference/skype, a short presentation of a research proposal in a seminar type setting with the current team present and a classical face-to-face interview.

To prepare for the interview please visit: ESA: www.esa.int, the Advanced Concepts Team: www.esa.int/act, read the publications about the team on the publications page (http://www.esa.int/gsp/ACT/publications/index.htm) or in case of questions, send us an email to: act@esa.int