Date of publication of the job offer: November 18, 2020

Job Offer: **PhD position: Create an AI capable of solving reasoning tasks it has never seen before**

Job Description:

Universitat Pompeu Fabra http://www.upf.edu and Prof. Gianni De Fabritiis, ICREA research professor https://es.linkedin.com/in/gdefabritiis, are looking to recruit a PhD student for a PhD on AI. Lab website: http://www.compscience.org/

Relevant References: https://scholar.google.es/citations?hl=en&user=-_kX4kMAAAAJ&view_op=list_works&sortby=pubdate

Can a computer learn complex, abstract tasks from just a few examples?

Current machine learning techniques are data-hungry and brittle—they can only make sense of patterns they've seen before. Using current methods like reinforcement learning, an algorithm can gain new skills by exposure to large amounts of data, but cognitive abilities that could broadly generalize to many tasks remain elusive. This makes it very challenging to create systems that can handle the variability and unpredictability of the real world, such as in chemistry, drug discovery and robots. However, alternative approaches, like inductive programming, offer the potential for more human-like abstraction and reasoning.

We plan to demonstrate such an approach using validated benchmarks to measure AI skill-acquisition on unknown tasks, with the constraint that only a handful of demonstrations are shown to learn a complex task. However, the idea is to move beyond the competition timeframe to create an AI that can solve reasoning tasks it has never seen before. It is expected that novel work in terms of a paper should be produced during this period.

Project and Institution that finance the contract : The work is supported with H2020 European Commission Funds, by grant H2020-CompBioMed2-Gianni de Fabritiis

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Skills and Experience: The candidate will preferably have a profile in computer science, physics or mathematics. However, we seek exceptional candidates with a passion for computing, the capability to think out of the box, the ambition to work in very innovative projects more than specific profiles.

The capability to think out of the box, the ambition to work in very innovative projects and very good communication skills in English.

Previous experience in reinforcement learning and related fields, Python proficiency and coding skills, knowledge of Tensorflow or pytorch, familiarity with Linux and the ability to work with version control systems (e.g. git) are required.

Benefits of the opening The successful candidate will be offered a part-time contract, with an annual gross salary around 19-20.000 EUR, commensurable with experience, with the possibility for an extension. Very good computational infrastructure.

Information on the application process:
Send CV to carina.oliver@upf.edu (Ref. C2_GdF)

Deadline to submit applications Dec 4, 2020