

## STFC Innovation Placements Opportunity

DiRAC has been awarded 8 STFC Innovation Fellowships that are of duration 6 months and have to be completed by 31 March 2020. In this scheme a final year PhD student or an early career researcher can have a funded placement (up to £21k) with a third-party organisation.

To qualify you have to be working on research that falls within the STFC remit in order to qualify for the placement; however you can be funded by other organisations besides STFC, as long as the subject area is identifiable as being in the Particle Physics, Astronomy & Cosmology, Solar Physics and Planetary Science, Astro-particle Physics, and Nuclear Physics.

To check your eligibility please contact Mark Wilkinson ([miw6@leicester.ac.uk](mailto:miw6@leicester.ac.uk)) and Clare Jenner ([c.jenner@ucl.ac.uk](mailto:c.jenner@ucl.ac.uk)).

We will do our best to be flexible.

However, the placement can't be on your research problem, but rather on the offered innovation problem.

This should be looked on as an opportunity to learn new skills and contribute outside of your research area.

**The deadline for applications is 10am on Monday 9th September 2019.**

We are pleased to offer the following DIRAC STFC Innovation Placement with Nextino and the University of Durham:

### **StorStory : Augmented analytics using AI**

This project will span high performance, massively parallel computing and machine learning. It will involve the analysis the COSMA HPC facility file systems and usage patterns. These multi-petabyte file systems are used for the storage of huge datasets. However, long-term storage becomes problematic as capacity continues to grow, and therefore off-line storage solutions (based on tape libraries) are required. Based on the results of file system analysis, archiving policies will be developed specifically for COSMA, and individual DiRAC projects. These archiving policies will allow optimal use of COSMA bulk storage to be made, using cost-effective tape storage as a long-term solution. Additionally, this information will also help to determine policies for tiered movement of data, from initial fast storage, to slower bulk storage and finally off-line storage. Artificial Intelligence (AI) and machine learning techniques will be developed to help implement these strategies. However, rather than being a black box, the AI must also output the reasons for its choices.

This project will help to inform future backup and archiving software releases by Atempo/Nextino, and will aid proof-of-concept trials of machine learning capabilities on COSMA.

Be Part of a Data Scientist Team, the challenge will be to enable AI to use Data Modelling for Abnormal Detection, Data Placement, Data Localization and Tiering recommendations.

A suitable candidate should have some experience with Unix systems (Linux), Python and ML/DL skill is desirable. An enthusiasm for machine learning and large data applications, and a willingness to engage with DiRAC will also be necessary.

The preferred location of this placement would be Durham, London or Orleans (France).

- Who will you work with?

Bernard Peultier (Nextino), Christophe Darras [christophe.darras@atempo.com](mailto:christophe.darras@atempo.com), and Alastair Basden [a.g.basden@durham.ac.uk](mailto:a.g.basden@durham.ac.uk)

What should you do if you are interested?

- Speak to your current supervisor and get their views BEFORE applying.
- Contact Thanasis for further information
- Send a CV and a 200 word statement on why you would want to do this Placement to Mark Wilkinson [miw6@leicester.ac.uk](mailto:miw6@leicester.ac.uk) and Clare Jenner ([c.jenner@ucl.ac.uk](mailto:c.jenner@ucl.ac.uk)) by 10am on Monday 9th September 2019

Professor Mark Wilkinson, DiRAC (Director)

Dr Clare Jenner, DiRAC (Deputy Director)