

## Training Opportunity for Luxembourgish Trainees

Reference	Title	Duty Station
LU-2020-SCI-SA	<b>Automating Operations of ESA's Science Data Archives with DevOps and Machine Learning</b>	ESAC
<p><b><u>Overview of the unit's mission:</u></b></p> <p>Within the ESA's Science and Operations department's Data Science and Archives Division, the ESAC Science Data Centre (ESDC, <a href="http://archives.esac.esa.int/">http://archives.esac.esa.int/</a>) is responsible for developing and operating the science data archives of all ESA space science missions (astronomy, planetary, heliophysics and human and robotic exploration), in close cooperation with the Science Operations Centres at ESAC, the instrument teams and with the scientific community.</p>		
<p><b><u>Overview of the field of activity proposed:</u></b></p> <p>In the context of the continuous improvement of the Science Data Archives provided by the ESDC to the scientific community and to the users in general, some areas have been identified in the development and operations of the software projects where automation and streamlining of the deployment system would enormously reduce the time-to-data for the scientific users of our archives and therefore maximise the scientific return of the scientific data hosted inside the archives. These improvements are being introduced into the development and operational workflows by adopting DevOps practices.</p> <p>DevOps is now a relatively well-established set of practices based around Continuous Integration and Continuous Deployment (CI/CD) and infrastructure. DevOps practitioners put tools and processes in place to realise faster time to value and greater governance for software development projects.</p> <p>You will contribute to the deployment and installation of DevOps infrastructure in the ESDC and will where possible contribute their earlier experience in DevOps in other contexts. It is of particular interest as well to start to apply new MLOps techniques where Machine Learning models are folded into the decision making for operational workflows based on real-time automated analysis of the operational data.</p> <p>The ESDC has very experienced full-stack software engineers in many current technologies as well as very experienced scientists in Astronomy, Planetary Science and Heliophysics who work collaboratively to provide innovative data services to the scientific communities that they serve. You will have therefore plenty of sources of learning at many different levels and will enjoy a purely international and highly professional work environment.</p>		
<p><b><u>Required education:</u></b></p> <ul style="list-style-type: none"> <li>• Master-level Degree in a technical or scientific discipline</li> <li>• Experience with Java and Java Script programming languages is required</li> <li>• Experience in DevOps or MLOps in an operational setting would be an asset</li> <li>• Knowledge of at least one Java Script frameworks (Angular, React, Vue or Vaadin) would be an asset</li> <li>• Knowledge of Postgres, Oracle and parallel databases would be an asset</li> <li>• Interest in space science is highly appreciated</li> </ul>		

- Fluency in English and/or French, the working languages of the Agency