

Web Application Development for Digital Repositories

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Over the past few years, with the expansion of technology and the increased volume of information produced by science, institutions have sought better practices on how to preserve and transfer knowledge, keeping the open access to information through digital means as a priority. According to [1], as far as the survey data is considered, the conditions and designs recommended by the movements in favor of the practice of an open science are solidified as a consensus among scientists, development organizations, scientific publishers and other actors involved in the scientific world. In 1998, some institutions began to think about how to preserve information, and since then they have been creating their own digital repositories. However, most still did not have standards for their development or for the establishment of partnerships with other institutions [2]. *DSpace* was originally created by the Massachusetts Institute of Technology (MIT) in collaboration with Hewlett Packard Corporation, and supports various types of content and digital file formats with storage function, management, preservation and visibility of the intellectual production [3]. The Nuclear Engineering Institute (IEN) - a research institution linked to the National Nuclear Energy Commission (CNEN) - considered the existing change in the way the information and results of researches carried out by the institution can be captured, stored, indexed, preserved and made available to the scientific community, thus, it considered using the *DSpace* software to create a platform through customizations that could meet those needs. Two approaches were adopted during the development of the work: an exploratory one, which sought a better theoretical framework of the *DSpace* software, and an empirical, customization tool and metadata, where the studies are being applied by means of the solution of the problems encountered in practice. And as a result, we now have the CarpedIEN platform. Initially, there was a versioning job change to 4.2, where lots of improvements in the repository have been implemented, such as how to show an easier

way to view items added recently, as well as the modernization of pages using the Bootstrap framework, based on HTML, CSS and JavaScript. In addition, a new layout for the CarpedIEN (Figure 1) has been implemented in search for better results in terms of interaction and mobile-friendly design, allowing the user with ease navigation within the repository.



Figure 1 - Layout CarpedIEN

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