›Artificial Intelligence Role In The Oil And Gas Industry

By:Antonio Ortíz

Geoscience and Production Manager
Nakasawa Mining & Energy

Artificial intelligence (AI) has emerged to revolutionize the world and particularly the way to obtain, process, synthesize and manage volumes of information and even predict trends and behaviors based on complex algorithms. The oil industry does not escape from this reality, opening a whole range of possibilities in the value chain, covering the Exploration, Production, Transportation and Marketing of Hydrocarbons aiming at the automation of processes and timely decision making, all this results in increased efficiency both at the production level and in the safety levels in each operation and finally in the optimization and reduction of costs. In the oil industry there have been interesting antecedents connected with AI, having been handling concepts such as neural networks to process information and predict trends, the management of geostatistical concepts, among others as its main predecessors. However, at present the field of AI is being evaluated for application in the following segments:

Safety: The predictive capacity of AI could contribute to the identification of risks and due compliance with H.S.E. policies.

Energy Management: The IA can perform optimization of energy consumption (fuels), through the analysis of patterns, recommending measures to reduce the volume of consumption and therefore emissions.

Exploration and Production: Efficiency in E&P processes will be significantly increased in terms of seismic data processing, reservoir modeling, and well drilling optimization.

Predictive Maintenance: Advanced AI algorithms are used for timely prediction of equipment and system failures, which significantly reduces non-productive time.

Equipment Supply Chain: Continuous inventory checks, reduced transportation costs and increased supply chain efficiency are being improved by AI.

Subsequently, companies such as BP are betting heavily on the implementation of Artificial Intelligence in order to reduce their carbon footprint. On the other hand, Shell is using AI for the execution of predictive maintenance of its equipment. Finally, at Nakasawa Mining and Energy we continue to drive the continuous improvement of our processes and the definitive inclusion of AI in our steam generation systems in order to maximize their efficiency.