Special Issue

Application of Machine Learning in Mining, Mineral Processing and Extractive Metallurgy

Message from the Guest Editors

Machine learning (ML) is one of the most exciting areas in artificial intelligence. Following several decades of the development of different learning techniques, ML is currently being applied in practically all industries. In the fields of mining, mineral processing, and extractive metallurgy, the application of machine learning, and in particular deep learning, has important benefits. Among them, the following stand out: the predictive modeling of processes, which facilitates the prediction of their behavior, the variability of their outputs, and improved control of them; the real-time analysis of material flow to optimize process performance through real-time analysis of operational variables; the predictive maintenance of equipment and components; and the optimization of the use of energy and water. The following Special Issue aims to present innovative applications of ML in mining, mineral processing, and extractive metallurgy, in addition to the quantitative benefits of the applications of ML in real mining plants.

Guest Editors

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About the Journal

Message from the Editor-in-Chief

Minerals welcomes submissions that report basic and applied research in mineralogy. Research areas of traditional interest are mineral deposits, mining, mineral processing and environmental mineralogy. The journal footprint also includes novel uses of elemental and isotopic analyses of minerals for petrology, geochronology and thermochronology, thermobarometry, ore genesis and sedimentary provenance. Contributions are encouraged in emerging research areas such as applications of quantitative mineralogy to the oil and gas, manufacturing, forensic science, climate change, geohazard and health sectors.

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manuscripts are peer-reviewed and a first decision is provided to authors approximately 18.2 days after submission; acceptance to publication is undertaken in 2.6 days (median values for papers published in this journal in the first half of 2025).

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