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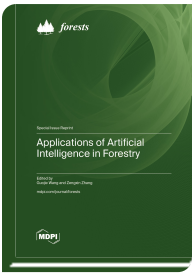
Special Issue Reprint

Applications of Artificial Intelligence in Forestry



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Recent advances in big data related to Earth observations have fostered interdisciplinary studies of forest dynamics and management, as well as their interactions with the environment. Artificial intelligence (AI) provides an interesting and efficient solution for big data applications in forestry. AI-based approaches, e.g., a variety of deep learning models, are currently dedicated to forest monitoring, assessment, mapping, and predictions, e.g., using satellite remote sensing images, for smart decision-making in forest management, among other applications. In such cases, deep learning models have indicated excellent performances in many studies. In the era of big data, there are numerous emerging opportunities to utilize deep learning models to improve our understanding of forest processes and dynamics, as well as forest–climate interactions in the warming environment. This reprint presents several relevant results from scientific studies in the fields of tree species identification, tree disease, and forest fire detection from satellite imagery; the ecological functions and productions of forests and their interactions with the climate are also studied using AI-based models.

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