ARTIFICIAL INTELLIGENCE

MUR DM 118 - AI-Driven Approaches for Biofabrication in Neuroscience: Advancing Biological Data Analysis and Industrial Applications

Funded By	Dipartimento DAUIN MINISTERO DELL'UNIVERSITA' E DELLA RICERCA [P.iva/CF:97429780584]
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Context of the research activity	Study the integration of artificial intelligence (AI) techniques in biofabrication, specifically within the field of neuroscience. Progetto finanziato nell'ambito del PNRR – DM 118/2023 - E14D23001810006
Objectives	This research abstract proposes a study on the integration of artificial intelligence (AI) techniques in biofabrication, specifically within the field of neuroscience. By leveraging AI algorithms, this research aims to advance biological data analysis and develop innovative biofabrication methods for industrial applications in neuroscience. The study will focus on utilizing AI-driven approaches to analyze complex biological data, including neural activity, cellular responses, and genetic information. Machine learning models will be employed to extract meaningful patterns and insights from large-scale datasets, enabling a deeper understanding of neurobiological processes. Using the knowledge gained from data analysis, the research will explore AI-guided biofabrication techniques to create neural tissue constructs, neuroprosthetic devices, and drug discovery platforms. These bioengineered solutions will be tailored to address industrial needs in the neuroscience field, such as personalized medicine, neural tissue regeneration, and pharmaceutical development.
Skills and competencies for the development of	Candidate must possess a combination of technical skills, knowledge, and research capabilities: - A theoretical background to work with complex mathematical models is required - Solid knowledge of AI and machine learning techniques - Programming capability with typical AI framework. Knowledge of parallel

the activity	programming techniques is a plus. - Ability to read and understand the literature. - Effective English communication skills, both written and verbal