College of Professional Studies
Northeastern University San Jose

MPS Analytics

Course: ALY 6080

Assignment:

Module 4 Project - Annotated Bibliography (Article 3)

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Submitted to:

Professor: Venkata Duvvuri

Submitted by:

Archit Barua

Nikshita Ranganathan

Heejae Roh

Shyamala Venkatakrishnan

AI and 3D printing

Summary:

In the article, Machado (2018) elaborates on the intersection between artificial intelligence (AI) and 3D printing in the healthcare domain. The author identifies several ways in which AI can enhance the design and production of 3D-printed medical devices and implants. One key application is the use of AI algorithms to optimize the design process, ultimately minimizing the amount of time and material required for production. AI can also be utilized to analyze large amounts of data, such as medical images and patient records, which can inform the development of customized 3D-printed treatments tailored to individual patient needs.

Machado (2018) further explores the role of AI in improving the accuracy and precision of 3D printing. For instance, AI can be used to monitor the printing process in real-time, identifying and correcting errors as they occur. This level of precision is particularly important when producing patient-specific medical devices and implants that must conform to exact specifications. Additionally, the author discusses the potential of AI to predict the mechanical properties of 3D-printed materials, enabling the production of devices with optimal performance characteristics.

Findings:

Machado (2018) underscores the potential of AI to enhance various aspects of 3D printing in healthcare, from design optimization and material efficiency to accuracy and precision. By leveraging AI algorithms and data analysis, it is possible to create patient-specific, high-quality medical devices and implants. Furthermore, AI's ability to predict material properties and monitor the printing process can ensure the production of reliable and safe devices for patient use.

Relation to Business Question:

This article is relevant to the business question as it offers a comprehensive understanding of the potential benefits and applications of AI in the 3D printing healthcare domain. By incorporating AI into their services, 3DHEALS can deliver innovative, efficient, and personalized solutions to clients, ultimately improving patient outcomes. Furthermore, the insights provided in this article can guide 3DHEALS in refining their approach to addressing client needs and staying at the forefront of technological advancements in the industry.

References

(PDF) Artificial Intelligence in 3D printing - researchgate. (n.d.). https://www.researchgate.net/publication/351924546_Artificial_Intelligence_in_3D_Printing

Ai-assisted 3D printing: Insights on Emerging Trends and Technologies. Hubs. (n.d.). https://www.hubs.com/blog/ai-assisted-3d-printing/#:~:text=AI%20algorithms%20can%20effectively%20analyze,remain%20within%20the%20optimal%20range.