**MACHINE LEARNING PROJECT**

**NAME**: CHITTIBOMMA BALARAM

**BRANCH:** COMPUTER SCIENCE OF ENGINEERING AND TECHNOLOGY

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3D PRINTER MATERIAL PREDICTIONS USING WATSON AUTO AI

**TECHNOLOGY**: MACHINE LAERNING

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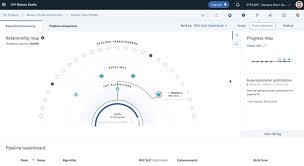
Introduction

3D printing, also known as additive manufacturing, has come a long way since it was first developed in the 1980s. While 3D printing originated as a tool for rapid prototyping, it has now evolved to cover a number of different technologies.

The evolution of 3D printing has seen a rapid growth in the number of companies adopting the technology. The applications and use cases vary across industries, but broadly include tooling aids, visual and functional prototypes — and even end parts.

​As the potential applications for 3D printing increase, companies are beginning to find ways to create [new business models](https://amfg.ai/2019/11/29/5-examples-of-how-3d-printing-is-creating-new-business-models/) and opportunities with the technology.

Machine learning is currently being used to solve this problem by using generative design and testing in the pre-fabrication stage, with the aim of improving printing efficiency and cost savings. Artificial intelligence is currently finding applications in 3D printing and additive manufacturing for creating intelligent service-oriented production processes for the industry.



3D printing materials, usually called by their traditional names such as ABS, nylon and more are available in the majority, but you have to be aware that many of the 3D printing materials only mimic true thermoplastics. Choosing the right material allows you to improve the shape, quality and function of your 3d printed part. Hence, selection of the correct 3D printing material is highly essential. To identify the type of material required after a 3D model is designed is a complicated task. The aim of the study is to determine the best material which will be perfect for the given use case. Where there are eleven setting parameters and one output parameters. Based on these input parameters we have to predict the best material for model. This model will predict whether to use ABS or PLA.

* 1. **About IBM Watson API**

Watson comes pre-integrated and pre-trained on a flexible information architecture optimized to accelerate production and deployment of AI. Build models and develop applications to help your business make more accurate predictions, automate processes, interact with users and customers, and augment expertise.

Developer tools that make it easy to incorporate conversation, language, and search into your applications. Watson gives you access to detailed developer resources that help you get started fast, including documentation and SDKs on GitHub.