

Engineering Design Models and Product Modeling in the Industry

Erfaneh Nikzad*

Department of Industrial Engineering, Shahed University, Tehran, Iran

INTRODUCTION

The engineering field intuitively understands what modeling and simulation involve. However, when it comes to a detailed description of the terms, and, more crucially, the role they play in product design and development, the majority of people struggle. In this post, we'll look into modeling in depth, as well as the many modeling software tools that assist engineers and designers in creating better products. We shall address modeling and simulation separately, despite the fact that they are almost always intertwined in product development.

ABOUT THE STUDY

A modeling is a computer generated representation or representation of a product or system. They might be either visual or numerical. Visual models include a little car with all of the attributes of the real one and a skeleton with various elements of the human body. Scientific models produced employing underlying mathematical concepts include an atom that depicts the movement of electrons rotating around the nucleus and a film displaying the computation of gravitational waves. Mechanical engineering and product development industries, such as the automobile industry, are two of the most prominent uses of modeling and it is one of the most important fields that uses big scale modeling is the automobile industry. Drop tests involving structural mechanics, deep drawing involving structural optimization, vehicle aerodynamics or air conditioning involving fluid mechanics, fuel injection involving combustion engineering, vehicle dynamics for optimal control, or sensors and actuators involving sensors and actuators-the automobile industry is one of the most important fields that uses large scale modeling. A model, in general, is a simplified depiction of reality (or what will be reality in the case of products and systems) that allows humans to understand how all of the various components work together.

2D and 3D Modeling

Previous models were created by hand on sketch boards; today, primary models are created using sophisticated 2D and 3D CAD software. Only the width and height of an object are included in

2D representations; depth is not included. By adding another dimension to the model, 3D modeling gives it a sense of depth. While most designers create with 3D CAD software, there are times when a simple width and height will serve. Furthermore, a 2D design can be swiftly developed or edited without affecting a part or assembly document. It's worth mentioning that the term 'model' is extensively used in a range of circumstances. Initial models are created using 2D and 3D CAD software, with assistance from product designers. When we talk about model and modeling in the context of this discussion, we're referring to mathematical modeling or parametric designs as they apply to product development. Product modeling, on the other hand, is far more complicated than 2D and 3D design because it deals with engineering aspects of the design. The goal of product modeling is to build items and systems that will last in the environment they were designed intended.

For, Instance, A university student can create drone model using 2D/3D software, but engineering skills is required to turn that model into a working prototype (and possibly a viable product subsequently forward). To turn a drone concept into a prototype, product engineers consider the drag it confronts, the wing span required to keep it afloat, the best material to use so that the drone is lightweight yet durable, a crash test in case it crashes to the ground or collides with an obstruction, and so on. As a consequence, product modeling transforms a design model into a functional model.

CONCLUSION

The development of a new product necessitates a wide range of talents and activities. The first and most important of these are design engineers' and industrial designers' abilities. Design engineers and industrial designers spend a significant amount of time formulating shape recommendations, modeling them, and testing and evaluating the many options. The study of form and function, as well as the connection between products, persons, and locations, is known as industrial design. It is a professional service that maximizes function, value, and aesthetics for both the user and the manufacturer's joint advantage. Industrial design can be found in all aspects of life, from your phone to the car you drive, as well as all of the gadgets and appliances you use

Correspondence to: Erfaneh Nikzad, Department of Industrial Engineering, Shahed University, Tehran, Iran, Tel/Fax: +44 (0)300 019 6175; E-mail: erfaneh.nikzad@shahed.ac.ir

Received: 02-Feb-2022, Manuscript No. IJOAT-22-17090; **Editor assigned:** 07-Feb-2022, Pre Qc No. IJAOT-22-17090 (PQ); **Reviewed:** 21-Feb-2022, Qc No. IJOAT-22-17090; **Revised:** 24-Feb-2022, Manuscript No. IJOAT-22-17090 (R); **Published:** 03-Mar-2022, DOI: 10.35248/0976-4860.22.13.175.

Citation: Nikzad E (2022) Engineering Design Models and Product Modeling in the Industry. Int J Adv Technol. 13:175.

Copyright: © 2022 Nikzad E. This is an open-access article distributed under the terms of the Creative Commons Attribution License, which permits unrestricted use, distribution, and reproduction in any medium, provided the original author and source are credited.

on a daily basis. Industrial designers put forth a lot of effort to create a product that is both useful and attractive, and modeling is a big part of that.