International Journal of Science and Research (IJSR)
ISSN: 2319-7064
SJIF (2020): 7.803

Deep Learning and Generative, Interactive Design for Multiphase Multiphysics Technologies

Vishal V R Nandigana

Department of Mechanical Engineering, Head of Membrane Technology and Deep Learning laboratory,
Fluid Systems Laboratory, Indian Institute of Technology Madras, Chennai 600036, India, Founder of AI Design PVT LTD
*Corresponding author: *nandiga[at]iitm.ac.in, https://aidesign.today*

Abstract: ***In this paper, we design, and analyze for the first time a combined generative design, interactive design with millisecond lag, in interactive design and analysis of Multiphysics Multiscale technologies for all manufacture industries in world industries to Product design new geometries, dimensions, for industrial use in manufacture industries for quick, rapid, generative and interactive design with analysis for rapid manufacturing of any new product design use industrial use manufacture industries across the world. We use DANN deep learning use inbuilt in AI Design software that is commercially made available for industries across the world, legally approved, patent approved under AI Design PVT LTD software industry, and AIDesign software is available under payment fee from https://aidesign.today.***

Keywords: Generative Design, Interactive Design, Artificial Intelligence, AIDesign, Multiphase Multiphysics Technologies

1. Introduction

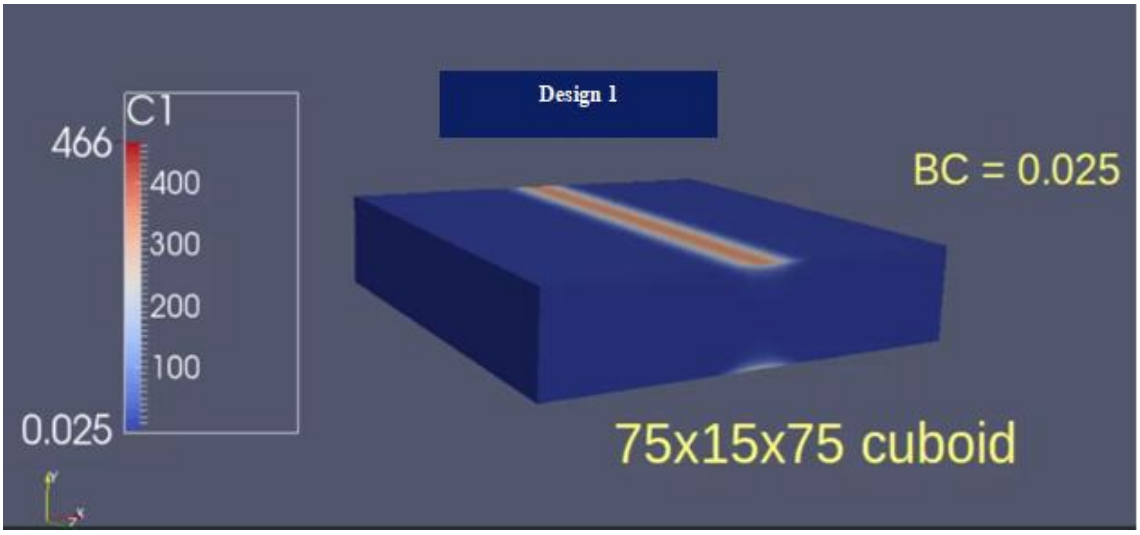
Product design is a new field of engineering, where the product is necessiated to design at extreme rapid time for manufacture industries as manufacture industries are well automated to design new any products across the world for humankind of 2020 era. While the design of new any products does not have an automated tool to manufacture on a daily basis for any new products that humankind demands [1]. The conventional CAD/CAE designs take a long approval from manufacture industries as CAD/CAE designs are stringent in rapidly intuitively and intelligently come with any new product designs in alignment with the progress in civilization of human kind. With the great growth in manufacture industries to use their manufacturing tools with big equipments intelligently for quick rapid speed manufacturing of any 3D product designs for meeting humankind of new 2020 era. Design world is still behind in this lead to meet with manufacture industries to provide the manufacture industries quick rapid manufacture industries approved any new 3D product designs for meeting the humankind of 2020 era [1].

Artificial intelligence with deep learning advancements was initially introduced as an automatic feature extraction system, requiring minimum pre-processing effort by the user [2, 3]. This is an old technique that has existed from 1940 and is known by different names such as - Cybernetics and Connectionism [2]. It was reintroduced as deep learning in 2007 [3]. The sudden increase in popularity of this field was due to the development of niche algorithms for training these networks. The most popular deep learning models are Convolutional neural network (CNN), which uses images to identify similarities and patterns. They take in image pixel information as input and learn patterns based on the RGB values of the pixels. Advancements in CNN architecture led to the development of sophisticated algorithms such as Recurrent Neural Network (RNN) [3].

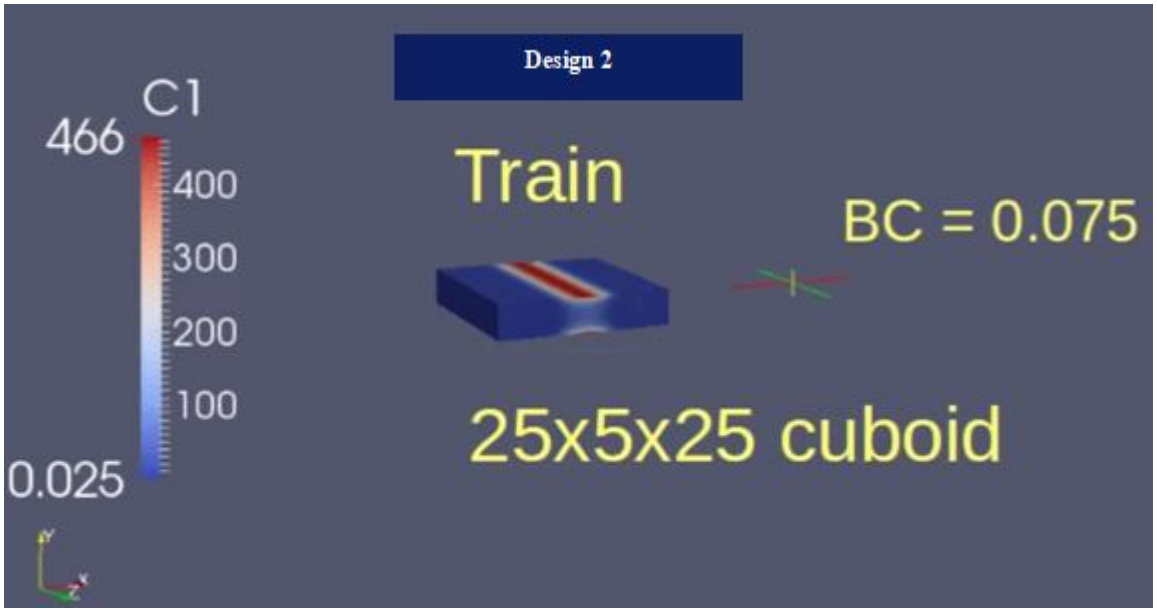
2. Generative Design

A. Interactive Design and Analysis of Multiphysics Multiscale Design with AI design Software

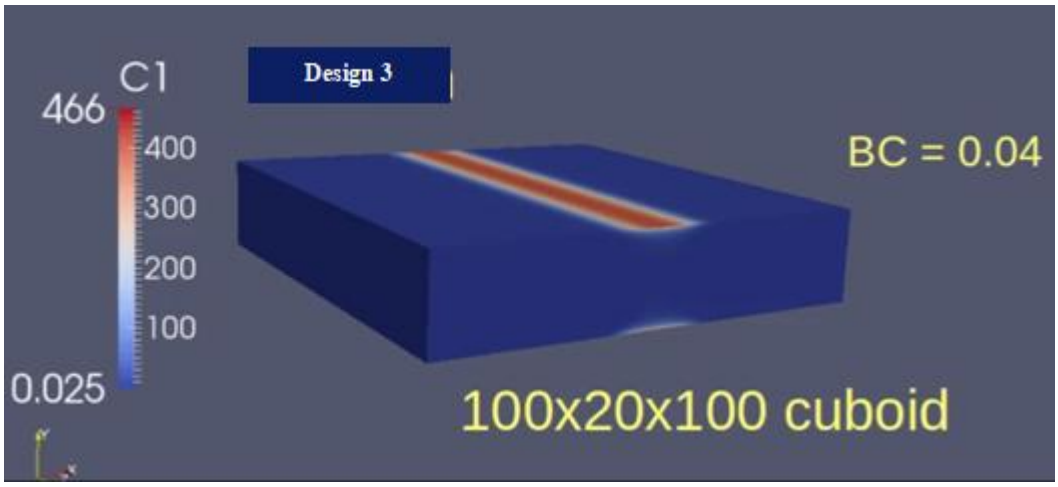
Fig. 1.(a-d) shows the Generative Design and Interactive Design, in millisecond lag time to change to new geometries and dimensions for multiphysics multiscale technologies for industries to manufacture any new Product design in quick, rapid millisecond any geometry, dimensions industries approved, patent approved, legally approved for industries to manufacture any new products that humankind of 2020 era demands. We use DANN deep learning use inbuilt in AI Design software, patent approved, legally approved, software for Generative Design and Interactive Design, in millisecond lag time for multiphysics multiscale technologies for industries use to manufacture any new products across the world. AI Design software is commercially made available for industries under AIDesign PVT LTD software industry, and AI Design software is available under payment fee from https://aidesign.today.



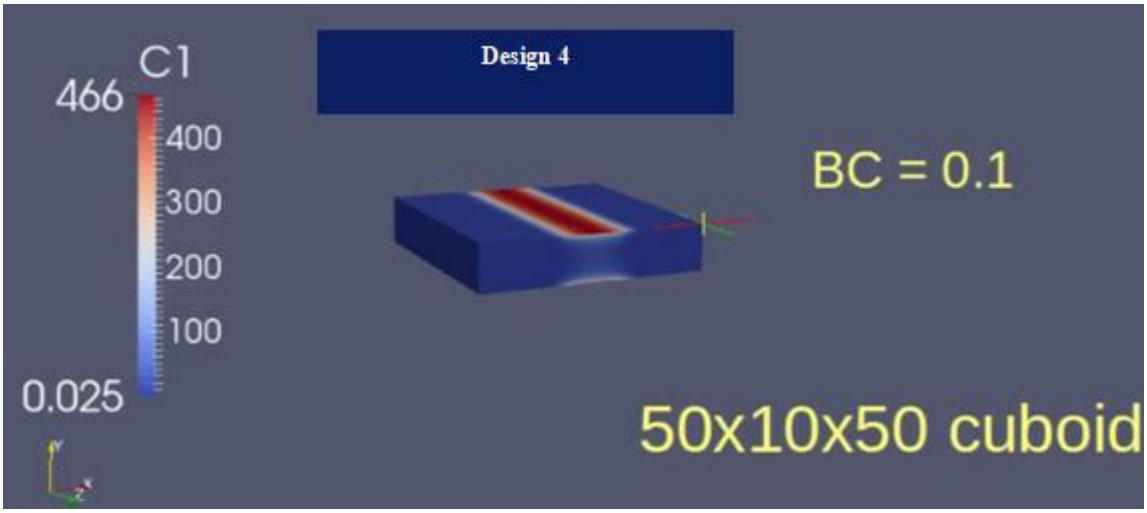
(a)



(b)



(c)



(d)

Figure 1: (a-d) Generative Design and Interactive Design, in millisecond lag time to change to new geometries and dimensions for multiphysics multiscale technologies for industries to manufacture any new products. The software is accessed under payment fee from *https://aidesign.today*

3. Conclusions

Here, we design, and analyze for the first time a combined generative design, interactive design with millisecond lag, in interactive design and analysis of Multiphysics Multiscale technologies for all manufacture industries in world industries to Product design new geometries, dimensions, for industrial use in manufacture industries for quick, rapid, generative and interactive design for rapid manufacturing of any new products that humankind of 2020 era demands across the world. We use DANN deep learning use inbuilt in AI Design software that is commercially made available for industries across the world, legally approved, patent approved under AI Design PVT LTD software industry, and AI Design software is available under payment fee from https://aidesign.today.

4. Acknowledgments

MHRD STARS research grant [STARS/APR2019/NS/148/FS], SERB CRG-Exponential technology grant CRG/2020/001684, Support for enterpreneurial and managerial development of MSMEs for Blue Fma PVT LTD, IoE-CoE C-MNBF grant, SB20210808MEMHRD008509 .

References

[1] Kunwoo Lee, Principles of CAD/CAM/CAE Systems, Addison-Wesley, 1999 – Computers.
[2] J. Philip C. Jackson, Introduction to artificial intelligence, Dover Publications, 2013.
[3] G. B. Jon Krohn, A. Bassens, Deep Learning Illustrated: A Visual, Interactive Guide to Artificial Intelligence, Addison-Wesley Professional, 2020.