



Research Objective

Generative Design is a very beneficial tool that reduces the weight of a component by optimally designing it in an innovative way, while keeping the integrity of the structure. In order to create these innovative designs, the designs usually contain very complex geometries and dimensions in which traditional manufacturing methods, such as subtractive manufacturing, cannot produce or require a very high cost.

Additive Manufacturing (AM) has opened the door for topology optimization to be suitable in manufacturing since the level of complexity a 3D printer can produce is way higher than a subtractive manufacturing machine.

The two industries using this technology are: Aerospace & Architecture.

Research Approach

Autodesk Fusion 360 will be used to redesign the functional parts for lightweight design and internal channel of fluid efficiency. Power Bed Fusion (PBF) additively manufacturing system Renishaw AM400 will be used for metal 3D printing, while FDM and SLS and Jetting technologies will be used for plastic.

Research Team

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Collaborator: Autodesk

