ALTAVENTUS

Company Overview

Altaventus is an engineering company located in Amsterdam, a vibrant and competitive eco-system for Aerospace, IT and Energy sectors and offering engineering solutions through custom software development and enhancement of open-source capabilities in fields such as;

- Computational Fluid Dynamics
- Flight Mechanics and Control
- Space Environmental Awareness
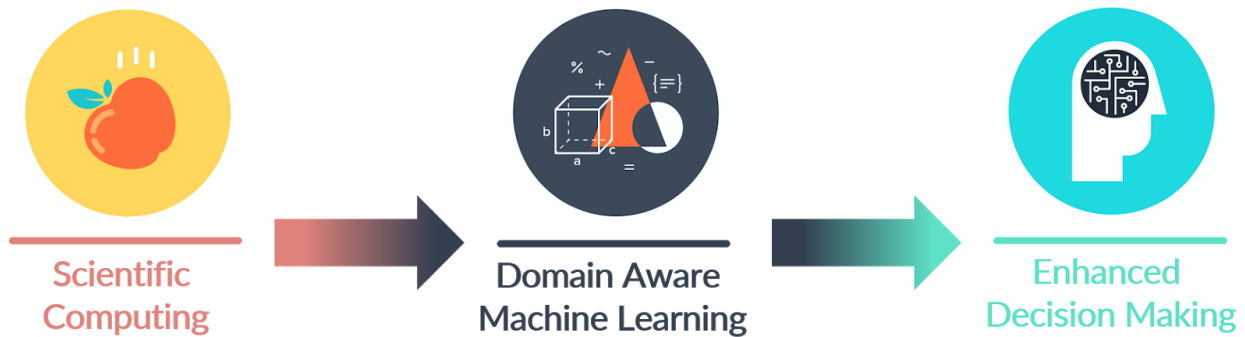- High Performance Computing

Mission

Altaventus' mission is to innovate the decision making methodologies used by aerospace engineering and energy companies during their design, development and operation phases of their products (e.g. airplanes, satellites, wind turbines) which are expensive, time-consuming and require interdisciplinary knowledge. This involves the integration of machine-learning algorithms with physical laws of nature for developing much more efficient engineering analysis software tools resulting in superior performance and lower costs.

Having identified that the Aerospace Engineering and Energy Companies are faced with problems with ever increasing complexity while meeting challenging performance and cost

requirements, Altaventus' vision is to be one of the top solution providers with a novel technology assisting companies, which rely on intelligent software and data more and more, to grow and maintain competitiveness without having to invest heavily in experimental and computational infrastructure.

Solution

Scientific Computing → Domain Aware Machine Learning → Enhanced Decision Making

Our solution aims to innovate conventional engineering design studies so that complex problems with large numbers of variables could be solved in acceptable times leading to more robust and high performance products which are heavily sought after especially in Aerospace and Energy sectors. To achieve this, Altaventus will develop Domain Aware Machine-Learning (DAML) solutions making use of state-of-the-art engineering and software development approaches in order to decrease design/development/operation costs and maintain competitiveness;

- Providing high fidelity and quantitative answers to multidisciplinary design problems which guides decision making process, reduces uncertainties regarding products, and maximizes performance.
- Providing quantitative models/digital twins in the form of DAML to integrate into decision making process

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