



# AI based Simulations in Wave Propagation

PID: 2021\DSAI\006

It is proposed to use AI trained engines to visualize the propagation of an ultrasonic wave inside a material as a potential replacement of time-consuming numerical methods that are currently used.

**Task to be assigned to the intern:** To use commercial FEM Numerical Modelling based simulation packages to develop data base of calculations and to train appropriate AI engine model with this data and to validate the AI engine with case studies and compare with the FEM simulations. Also, to test the boundaries of validity of the model.

**Learning outcome:** The Intern will learn on 3 fundamental technologies i.e., Wave Propagation Analysis, Numerical Modelling, and AI based simulations.

**Duration:** 6 months

**Skills required:** Understanding of AI based tools and if possible numerical methods tools such as Ansys or Abaqus or Comsol is desirable.

**Pre-requisite courses:** ML/AI

**No. of interns required:** 1