

Visual Servo of Tokamak Relevant Remote Handling Systems using Neural Network Architecture

- Tokamak remote handling is largely dependent on the 'man-in-the-loop' architecture.
- Existing inspection and maintenance systems use an operator to guide the robot and carry out the required manipulation
- With advancements in machine learning and artificial intelligence, thoroughly trained architectures can carry out autonomous manipulation of robotic/remote handling systems with greater dexterity and precision.
- The paper aims at employing machine learning in one specific field of autonomous alignment of end effectors using a camera mounted on the system – a procedure, also commonly known as Visual Servoing.
- Results on a tokamak relevant long reach arm shows a stable and effective manipulation using a pre-trained convolution neural network.