**NEW HORIZON COLLEGE OF ENGINEERING**

**DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING**

**Academic Session: July – November 2019**

**PROJECT REVIEW-1**

**Student details: Date of Submission: 30-Sept-19**

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| **PROJECT TITLE** | ***Narcotics Elimination through Intelligent Ultrasound*** |
| **PROBLEM STATEMENT** | * To develop a computerized AI application using Intelligent Ultrasound that eliminates narcotics and its side effects and improves pain management. * The system should be able to identify nerve structures in a dataset of ultrasound images of the neck that would improve catheter placement and contribute to a painless surgery. * The system should be able to check the validity of input data and give a feedback to the user in case of errors or inconsistency using exception handling. |
| **SCOPE OF PROJECT** | * To improve pain management through the use of indwelling catheters that block or mitigate pain at the source before the surgery begins. * To identify and segment a collection of nerves called the Brachial Plexus (BP) through ultrasound images. * Dataset - A large training set of images where the nerve has been manually attributed by doctors. These doctors were trained by experts and instructed to attribute images where they felt confident about the existence of the BP nerve. |
| **METHODOLOGY** | Approaches for exploratory data analysis:   * Separate run-lengths and pixel locations into separate lists * Get number of data points in each image * Get all absolute target values and Remove NaNs * Image analysis * Convert pixel values in the training data into X and Y positions on the photos so that we can see the most common positions. * Get dimensions of the images * Target pixel location histogram - 40 , 80 , 160 , 320 bins |

**Project Guide**