

**National Institute of Technology Karnataka, Surathkal**  
**Department of Computer Science and Engineering**  
**Mini project proposal submission (Computer Graphics)**  
Class: VI Sem. BTech CSE (Jan.-Apr.2018)

Roll No. in the class	Inst. Reg. No.	Name	Mail Id.	Phone No.	CGPA and Role (Leader/Member)
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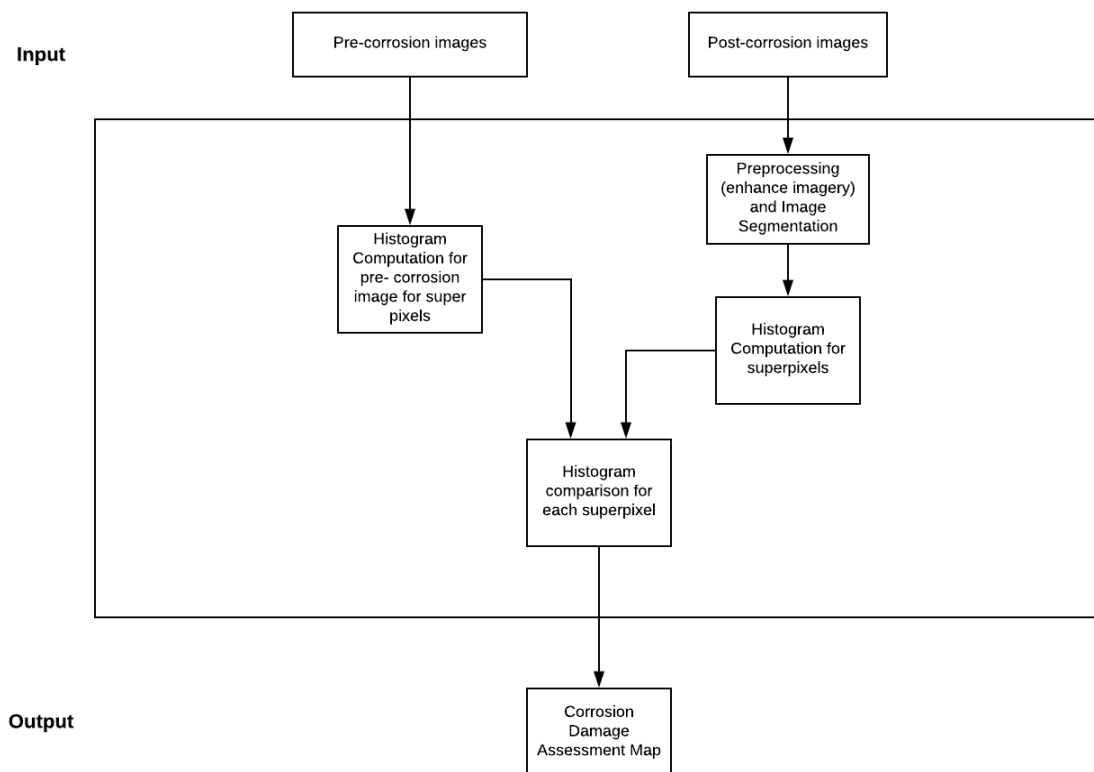
**Date:** 12 January 2018, Friday

**Title:** Corrosion Damage Identification and Lifetime Estimation of Ship Parts using Image Processing

**Abstract:**

Corrosion is a natural process which causes deterioration of ships leading to high maintenance costs, early system failures and an overall shortened service life. Human visual inspection is currently the most widely used method to assess corrosion. We aim to use image processing to compare pre-corrosion and post-corrosion images to determine the extent of corrosion and estimate the time period within which the ship parts have to be replaced. We also plan to evaluate the performance of corrosion preventive measures such as galvanisation, painting, etc on different parts of the ship, for example, parts exposed to only air and parts to saline water and air.

**Flow Diagram:**



Based on Corrosion Damage Assessment map, extent of corrosion and lifetime of ship parts is estimated. Comparative study of galvanisation, painting, etc can also be done by obtaining damage assessment map in each case.

**Inputs:**

Pre-corrosion and post-corrosion images

**Outputs:**

Corrosion damage identification and assessment map, estimation of lifetime of ship parts, comparison of corrosion prevention techniques for different ship parts

**Performance measurement criteria (Milestones and dates):****Milestones:**

1. Review existing and related work by researchers on this topic (Jan 12, 2018)
2. Obtain data sets for training and testing (image classification) (Jan 16, 2018)
3. Read code of related image processing algorithms to get an idea of how to proceed with project implementation (Jan 20, 2018)
4. Choose optimal classifier by testing on data sets - 1 and 2 (Jan 23, 2018)
5. Implementation of code for assessing corrosion damage to ship parts (Jan 31, 2018)
6. Testing code with Dataset 1 (Feb 3, 2018)
7. Determine relation between extent of damage to ship parts and estimated life and suitably extend code (Feb 8, 2018)
8. Run code on Dataset 2 and summarize results (Feb 12, 2018)
9. Determine effective corrosion prevention technique for different ship parts through results of Milestone 8 (Feb 15, 2018)

Dataset 1 - No differentiation between various ship parts

Dataset 2 - Ship parts are classified based on the type of corrosion faced by them (exposure to saline water / air) and corrosion prevention technique chosen

**Work Distribution:**

1. Milestone 1 - All three members
2. Milestone 2 - Aparna
3. Milestone 3 - All three members
4. Milestone 4 - Adya
5. Milestone 5 - Indukala, Adya
6. Milestone 6 - Indukala, Adya
7. Milestone 7 - Indukala, Aparna
8. Milestone 8 - Adya, Aparna
9. Milestone 9 - Indukala