## PROJECT PROPOSAL – DIGITAL IMAGE PROCESSING

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| **Project ID** | 21 |
| **Project Title** | Web-based interactive tool for demonstrating image processing techniques |
| **Github Link** | https://github.com/lokeshbalani/pixels |
| **Team Members** | Lokesh Balani (20173073), Abhishek Tyagi (20173067) |
| **Abstract (Main Goals)** | Create a interactive website for applying digital image processing techniques to images provided by the user and showing the result output image in real time |
| **Problem Definition and Results** | * Creating a design and wireframe for the website * Using Django framework to implement the design of the website * Developing the front end for the website using HTML, CSS and JavaScript * Develop interactive interface and its backend python support for reading the parameters passed, applying image processing techniques and displaying the resulting image as a response to the user * The image processing techniques to be implemented:   + Brightness and Contrast adjustment (like in Tvs)   + Piecewise Linear Transformations through user drawn and adjustable curves   + Blurring/Smoothing   + Sharpening   + Median Filter (Noise Reduction)   + Edge detection using derivative filters   + Unsharp Masking and High boost filtering   + ChromaKeying   + Correlation and Convolution using a user defined filter   + DFT and iDFT for a given image   + Erosion and Dilation   + Opening and Closing |
| **Division of work among Team Members** | 1. Design of website [Lokesh, Abhishek] 2. Django framework – front-end development [Lokesh] 3. Django framework – interactive parameter model [Lokesh] 4. Image processing service for interfacing with the python modules and front-end [Abhishek] 5. Python – preparing image processing modules for porting [Lokesh, Abhishek] |
| **Project Milestones and Deadlines** | Website Design: 7 October  Website Front-end :  Image Processing Techniques: 20% every week  Working Website: 7 November  Project Presentation: 29 November |