

1096-VG-1728      **Mohamed Allali\*** (allali@chapman.edu). *Gradient and Laplacian-Type Edge Detection.*

Image manipulation is attractive and leads to creative and meaningful exploration of the image's content, and appreciation of the mathematics built into the process on many levels. One of the most studied problems in the image analysis area is edge detection as enormous information is contained in image edges. If one defines an edge as an abrupt gray-level change, then the derivative, or gradient, is a natural basis for an edge detector. In this talk, I will show how to use the gradient and the Laplacian approaches as the basis for practical image edge detectors and how it can be incorporated as a solid project into many mathematics courses. (Received September 16, 2013)