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**Jason E Miller\*** ([jason.miller@csuci.edu](mailto:jason.miller@csuci.edu)), One University Dr, Camarillo, CA 93012. *Relative critical sets, medial axes, and networks.*

Teaching computers how to see shapes in a digital image is a challenge whose solution varies by context. The medial axis transform provides a rich and elegant way to describe shapes in binary images. An attempt to extend that idea to greyscale images led to Eberly's height ridge and scale-space ridge and Damon's relative critical set. The generic structure of these sets has been classified, but attempts to realize them as a generalization of the medial axis have not been successful. This talk will describe these sets and attempts that have been made to use relative critical sets as proxy for medial axes in greyscale images. (Received September 18, 2013)