



2

On a given iteration during training, which pixel should we select?

Ayan Chatterjee, *Cranfield University*

On a given training iteration, visualise yourself physically standing on a residual error map. Assume (i) the pixel with the smallest residual error is likely the most learned material. And, (ii) the pixel with the maximum error is probably the least learned material. Simultaneous orthogonal marching pursuit (SOMP) residue is a way to estimate the residual error rapidly with dictionary atoms. In a real scene, there is noise and outliers. However, by selecting the pixels with the maximum SOMP residue at each iteration, one can learn both background and trace materials blindly. Learning trace materials is critical for essential applications like target detection. (IEEE Letters of the Computer Society publication DOI: 10.1109/LOCS.2019.2938446, pre-print available from Cranfield CERES).