

## New AASPI Algorithms: March 2020

Application Name	Application Description	Location	Software Documentation	AASPI References
horizon_tracking	Algorithm that allows semiautomatic picking of horizons internal to formations whose boundaries have been manually picked	Stand alone algorithm that requires Matlab run--time libraries	<a href="http://mcee.ou.edu/aaspi/documentation/Interactive_tool_s-horizon_tracking.pdf">http://mcee.ou.edu/aaspi/documentation/Interactive_tool_s-horizon_tracking.pdf</a>	<a href="http://mcee.ou.edu/aaspi/publications/2020/Lou_et_al_2020-Nonparallelism_attributes_and_data_adaptive_Kuwahara_image_processing.pdf">http://mcee.ou.edu/aaspi/publications/2020/Lou et al 2020-Nonparallelism attributes and data adaptive_Kuwahara_image_processing.pdf</a>
agc	A simple program that applies automatic gain control	under aaspi_util/agc		
nonparallelism	Algorithm that computes the standard deviation of vector dip, amplitude gradients, or both within an analysis window - useful for facies classification	under aaspi_util/Geometric Attributes	<a href="http://mcee.ou.edu/aaspi/documentation/Geometric_Attributes-nonparallelism.pdf">http://mcee.ou.edu/aaspi/documentation/Geometric_Attributes-nonparallelism.pdf</a>	<a href="http://mcee.ou.edu/aaspi/publications/2019/Qi_and_Marfurt_2019-Nonparallelism_attributes_and_data_adaptive_Kuwahara_image_processing.pdf">http://mcee.ou.edu/aaspi/publications/2019/Qi_and_Marfurt_2019-Nonparallelism_attributes_and_data_adaptive_Kuwahara_image_processing.pdf</a>
som_waveform_classification	new capabilities that allow mapping of "stacking patterns" measured by Poisson's ratio, Impedance, and other inversion products	under aaspi_util/Formation Attribute Analysis	<a href="http://mcee.ou.edu/aaspi/documentation/Formation_Attributes-som_waveform_classification.pdf">http://mcee.ou.edu/aaspi/documentation/Formation_Attributes-som_waveform_classification.pdf</a>	
similarity_multiple_input	An generalization of multispectral, multiazimuth, and multioffset coherence that allows greater flexibility on the input data volumes used	under aaspi_util/Geometric Attributes	<a href="http://mcee.ou.edu/aaspi/documentation/Geometric_Attributes-similarity_multiple_input.pdf">http://mcee.ou.edu/aaspi/documentation/Geometric_Attributes-similarity_multiple_input.pdf</a>	

<p>transformation analysis</p>	<p>Analyze data before and after transformation (i.e. normalization), supporting different normalization schemes, including z-score, robust scaling, and logarithmic scaling, as well as user defined shifting, stretching, and logarithmic scaling.</p>	<p>under aaspi_util &gt; Machine learning toolbox &gt; analyze input</p>	<p><a href="http://mcee.ou.edu/aaspi/documentation/Machine_Learning_Toolbox-analyze_input.pdf">http://mcee.ou.edu/aaspi/documentation/Machine Learning_Toolbox-analyze_input.pdf</a></p>	<p><a href="http://mcee.ou.edu/aaspi/upload/AASPI_Consortium_Review_Meetings/2019-11-21_AASPI_Review_Meeting/Presentations/15h30-Thang%20Ha-The_importance_of_attribute_scaling_for_ML_applications.pptx">http://mcee.ou.edu/aaspi/upload/AASPI Consortium_Review_Meetings/2019-11-21_AASPI_Review_Meeting/Presentations/15h30-Thang%20Ha-The importance of attribute scaling for ML applications.pptx</a></p>
--------------------------------	--	--	--	--