

Dec 15, 2020

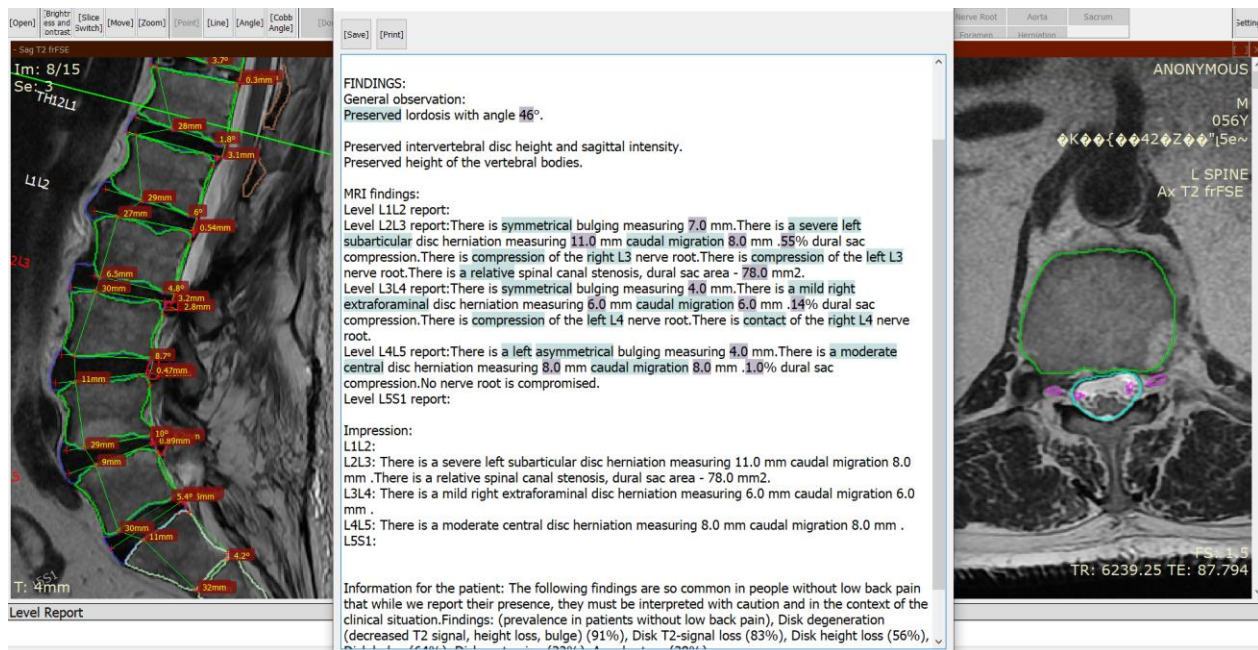
Smart Soft Ltd., is pleased to share the final results from the multi-center clinical trials for CoLumbo - the unique machine learning algorithm, based on fully convolutional neural networks combined with medical domain knowledge which are capable of reading MRI spine images and provide pathology description, findings and measurements with a written report in a matter of seconds.

The results show that CoLumbo can be a valuable partner for MRI lumbar spine reading and reporting providing time savings of 25%.

Diagnosis	Sensitivity [%]	Specificity [%]
Herniation presence (without sequestration)	70.32	92.41
Nerve root impingement grade when herniation is presence	83.61	95.90
Dural sac compression, caused by herniation	85.21	96.04
Herniation position*	75.82	N/A
Herniation migration (without sequestration)	90.76	87.70
Bulging presence	74.83	93.57
Central spinal canal stenosis presence	92.70	99.04
Spondylolisthesis presence	86.49	98.86
Spondylolisthesis grade*	100.00	N/A
Pseudolisthesis presence	100.00	99.95
Hypo- and hyperlordosis presence / accentuated and straightened lordosis	85.19	96.68
Precise determination of levels*	98.95	N/A

Segmentations	Accuracy [%]	p-value
Vertebra (on axial slice)	98.27%	< 0.000001
Disk – not herniated (on axial slice)	97.47%	< 0.000001
Herniated part of the disk, without sequestration (on axial slice)	99.19%	< 0.000001
Dural sac (on axial slice)	98.79%	< 0.000001
Ligamentum flavum (on axial slice)	99.73%	< 0.000001
Nerve roots (on axial slice)	99.33%	< 0.000001
Aorta or iliac artery (on axial slice)	96.93%	< 0.000001
Vertebra (on sagittal slice, only around mid-sagittal, 35 mm)	99.87%	< 0.000001
Disk – not herniated (on sagittal slice, only around mid-sagittal, 35 mm)	99.60%	< 0.000001
Sacrum (on sagittal slice)	99.46%	< 0.000001
Appropriately chosen planes*	99.75%	< 0.000001

Measurements	Accuracy [%]	p-value
Intervertebral angles, °	99.60%	< 0.000001
L1S1 lordotic angle, °	98.00%	< 0.000001
Percentage spondylolisthesis slippage	98.80%	< 0.000001
Vertebral height, mm	99.91%	< 0.000001
Disk height, mm	99.51%	< 0.000001
Herniation size, mm	99.20%	0.000004
Dural sac area, mm <sup>2</sup>	99.46%	< 0.000001
Aorta diameter, mm	99.73%	< 0.000001
Bulging size, mm	97.31%	< 0.000001
Canal Diameter mm	99.46%	< 0.000001
Foramen size mm	99.46%	< 0.000001



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