

Appendix E1

Details of KneeMRI dataset (Croatia) and MRNet dataset (USA)

KneeMRI dataset, Croatia

The KneeMRI dataset was obtained from the Clinical Hospital Centre Rijeka, Croatia and was acquired using a 1.5T Siemens Avanto MRI scanner. It contains 917 sagittal PD-weighted examinations from 2007 until 2014.

MRNet dataset, USA

The MRNet dataset comprises 1370 examinations between 2001 and 2012 by a research team at Stanford University Medical Center. MRNet dataset was divided into 3 sets: a training set with 1,130 patient samples, a validation set with 120 patient samples, and a testing set with 120 patient samples. The training and validation sets are publicly available, but the testing set is not. It also includes other knee conditions, such as normal knees, meniscal tears, and ACL tears, but we restricted our analysis to cases with intact and ACL tears. Each examination contained the following sequences: coronal T1-weighted, coronal T2 with fat saturation, sagittal proton density (PD)-weighted, sagittal T2 with fat saturation, and axial PD-weighted with fat saturation. Examinations were performed using GE scanners, 775 (56%) with a 3T magnetic field, the remainder with a 1.5T magnetic field.

Appendix E2

MRI imaging protocol and specific details of the all datasets in this study

MRNet dataset, USA

Imaging parameters for the 3.0T sagittal T2-FS sequence included: field-of-view (FOV) = 15cm, echo time (TE) = 54 ms, relaxation time (TR) = 5599 ms, slice thickness = 2.5 mm, gap = 0 mm, flip angle = 142°, number of sections=42, acquisition matrix size=384×192.

Imaging parameters for the 1.5T sagittal T2-FS sequence included: field-of-view (FOV) = 16 cm, echo time (TE) = 54 ms, relaxation time (TR) = 3266 ms, slice thickness = 3.5 mm, gap = 0.5 mm, flip angle = 90°, number of sections=24, acquisition matrix size= 448×192.

Chinese dataset

All image acquisition is done on a 1.5T Achieva (221 participants) or 3T Ingenia (115 participants). Imaging parameters for the 3.0T sagittal PDW-SPAIR sequence included the following: field-of-view (FOV) = 18 cm, echo time (TE) = 30 ms, relaxation time (TR) = 2844 ms, slice thickness = 3.5 mm, and gap = 0.35 mm.

Imaging parameters for the 1.5T sagittal PDW-SPAIR sequence include: FOV = 16 cm, TE = 30 ms, TR = 3000 ms, slice thickness = 3.5 mm, and gap = 0.35 mm.