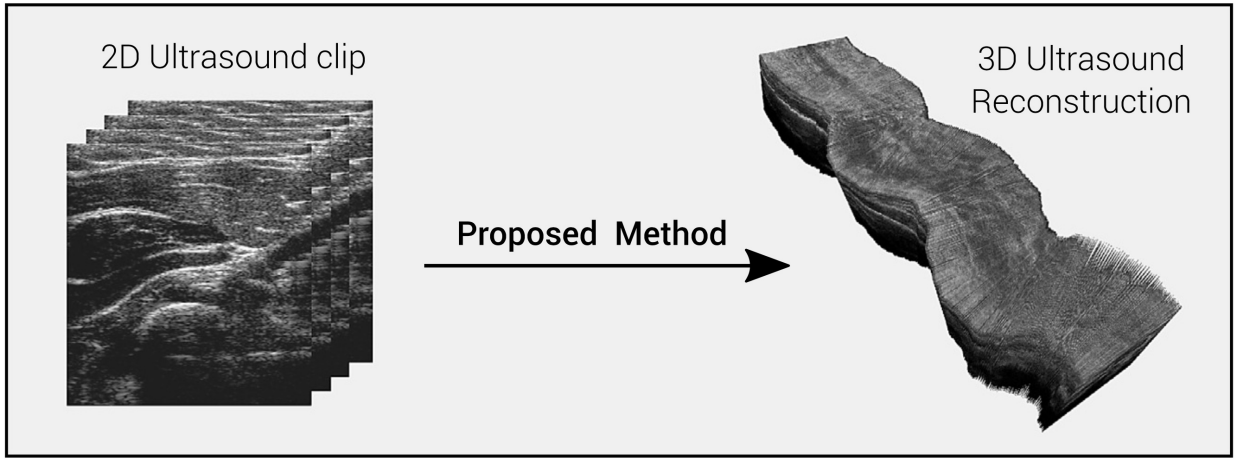
Volume reconstruction from freehand Ultrasound acquisition

Rationale

Volume reconstruction from a cineloop of 2D ultrasound images usually requires a tracking device to estimate the position of the probe at each timepoint. Removing this requirement greatly reduces the costs of performing the reconstruction and enables the use of US for 3D studies with the same hardware as a 2D scan.



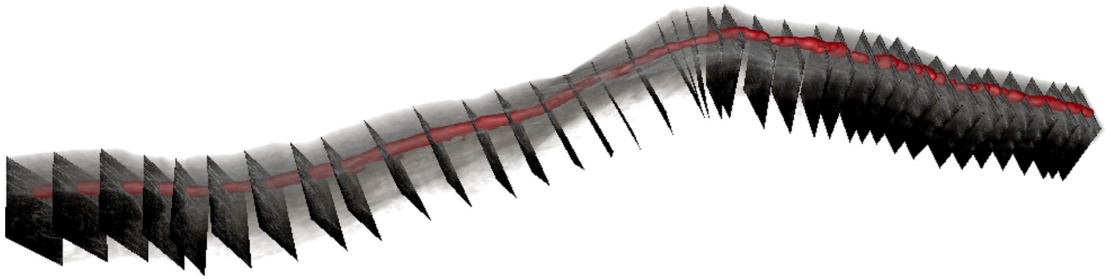
Prevost et al. 3D freehand ultrasound without external tracking using deep learning, 2018, https://doi.org/10.1016/j.media.2018.06.003

Tools

Deep learning, Python, Matlab, volume reconstruction

Dataset

2D cross-sectional video scan of tendons or newly acquired data



Reconstruction of a very long ultrasound sweep (more than 60 cm) across the full leg showing the measurement of the great saphenous vein. Prevost et al.

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