BAB VI

KESIMPULAN DAN SARAN

6.1. Kesimpulan

Melalui MTANN multi-resolusi sebagai basis, kami telah memperbarui teknik pemrosesan gambar untuk menghapus sistem muskuloskeletal dari radiografi. Sistem ini adalah segmentasi utama dari komponen implan dalam gambar sinar-X dan sangat menghilangkan jaringan lunak seperti otot dan jaringan keras sebagai tulang. Oleh karena itu, pendekatan mereka akan berpotensi berguna baik untuk ahli radiologi dan untuk identifikasi implan dalam radiografi dalam sistem CAD.

6.2. Saran

Untuk konfigurasi MTANNs, digunakan struktur lima peringkat karena diingin secara teknis untuk menunjukkan bahwa setiap pemetaan berkelanjutan dapat dicapai oleh lima peringkat JST dengan lebih baik. Prosedur untuk menentukan struktur JST digunakan untuk menentukan jumlah unit tersembunyi. Prosedurnya adalah metode pemotongan berbasis sensitivitas, misalnya, di mana unit tertentu telah diekstraksi secara eksperimental dan unit dengan kesalahan uji paling sedikit telah dieliminasi, sensitivitasnya telah diukur. Unit tersembunyi yang berlebihan telah dihapus dan dikerjakan ulang untuk memulihkan potensi

kerugian akibat eliminasi, yang mengakibatkan berkurangnya sistem di mana unit yang berlebihan telah dihapus.

Tujuan pelatihan MTANN adalah untuk menghilangkan kesalahan antara implan dan gambar otot tulang. Standar pengajaran gambar tulang akan berdampak pada gambar output dan, pada akhirnya, pada gambar akhir implan. Pemrosesan gambar implan adalah untuk mengurangi kebisingan kuantum akan menjadi cara untuk meningkatkan akurasi pengajaran gambar implan. Gambar implan dosis tinggi yang relatif hanya boleh digunakan untuk persiapan. MTANN yang terlatih dapat digunakan dengan dosis standar setelah pelatihan selesai.

MTANN adalah model non-linear yang sangat kompleks. Model yang kompleks seringkali tidak digeneralisasikan dengan baik. Ketika hanya sejumlah kecil sampel yang telah dilatih dalam suatu model (mis. Generalisasi JST) akan lebih kecil, yaitu hanya sampel pelatihan yang dapat dipasang; ini disebut "over-fitting". Pertanyaan ini juga muncul ketika model memiliki jumlah kebebasan (parameter) yang lebih besar daripada jumlah sampel pelatihan. Sebuah studi menemukan bahwa JST standar dengan 100 parameter akan membutuhkan antara 400 dan 800 sampel non-pelatihan. Ukuran fitment 4-8 kali lebih tinggi dari kriteria JST. Di sisi lain, temuan dalam dokumen ini dengan database publik menunjukkan bahwa MTANN memiliki kapasitas generalisasi yang tinggi, yang dapat dilihat untuk aplikasi lain. Beberapa sampel pelatihan mungkin diperlukan untuk menentukan parameter dalam MTANN dengan benar.

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