



River Publishers Series in Computing and Information Science and Technology

Acceleration of Biomedical Image Processing with Dataflow on FPGAs

Authors:

Frederik Grüll, Goethe University Frankfurt, Germany

Udo Kebschull, Goethe University Frankfurt, Germany

ISBN: 9788793379367

e-ISBN: 9788793379350

Available From: June 2016

Price: € 65.00

Description:

Short compute times are crucial for timely diagnostics in biomedical applications, but lead to a high demand in computing for new and improved imaging techniques. In this book reconfigurable computing with FPGAs is discussed as an alternative to multi-core processing and graphics card accelerators. Instead of adjusting the application to the hardware, FPGAs allow the hardware to also be adjusted to the problem.

Acceleration of Biomedical Image Processing with Dataflow on FPGAs covers the transformation of image processing algorithms towards a system of deep pipelines that can be executed with very high parallelism. The transformation process is discussed from initial design decisions to working implementations. Two example applications from stochastic localization microscopy and electron tomography illustrate the approach further.

Topics discussed in the book include:

- Reconfigurable hardware
- Dataflow computing
- Image processing
- Application acceleration

Keywords: FPGAs, reconfigurable hardware, dataflow computing, image processing, high-performance computing

Denmark Head Office

Alsbergvej 10
9260 Gistrup
Denmark
www.riverpublishers.com
Email: info@riverpublishers.com

USA Office

Indianapolis, IN
USA
Tel.: +1-3176899634
Email: rajeev.prasad@riverpublishers.com

UK Office

River Publishers
Email: philippa.jefferies@riverpublishers.com