Verasonics®
The leader in Research Ultrasound™

NEW Multi-Threaded External Processing (1/2)

Dramatically increase processing throughput using a simple framework for writing multi-threaded C/C++ external functions for multi-core computing systems

- For substantial processing tasks, the framework offers a substantial speed up in processing throughput (e.g. ~10X or more for a 16-core computer system)
- Divide up the number of pixels by the number of processing cores, allowing each core to process only a subset of the entire pixel grid[1]
- Manages the tasks of creating the processing core threads, assigning pixels to each thread, and synchronizing the processing threads at the completion of processing
- Incorporate External Processing Functions using a variety of languages and methods[2]

[1] Pixel-based processing functions only.
[2] For example, Matlab, C/C++, Multi-threaded processing and GPU processing functions.

Verasonics® *NEW* Multi-Threaded External Processing (2/2)

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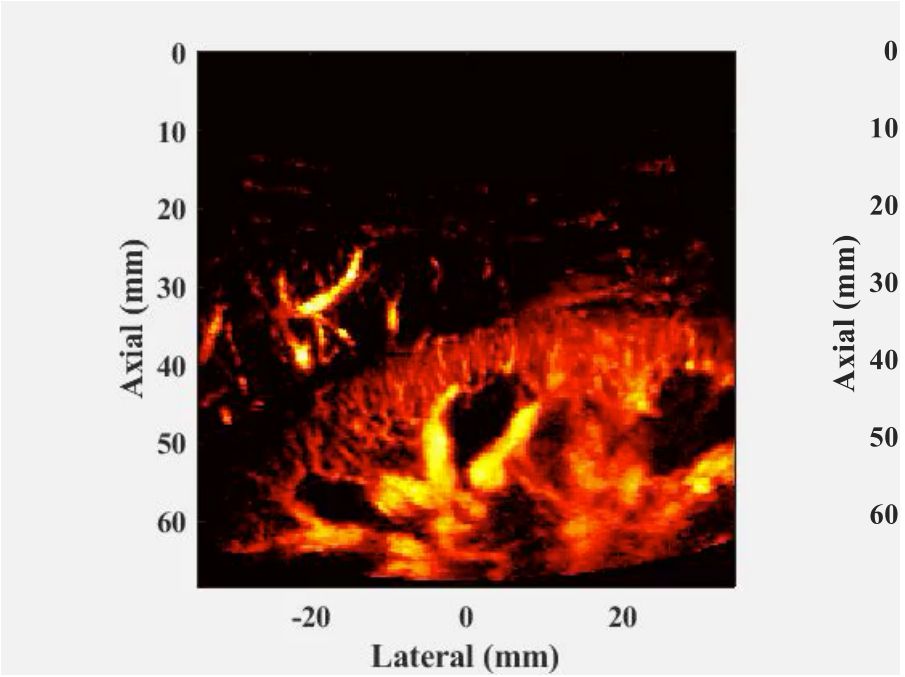
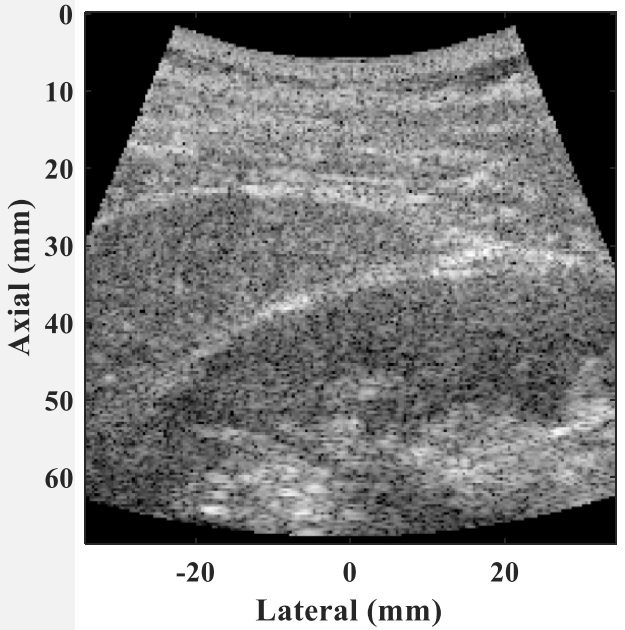
Improved processing throughput for research using randomized singular value composition (rSVD)-clutter filters for micro-vessel imaging

- Implemented on a 12-core CPU (host computer
- Processing time of the rSVD-based clutter filter was less than 30 ms
- The authors demonstrated that the micro-vessel imaging frame rate can reach ~22 Hz when the block size, ensemble size and the rank of tissue clutter subspace were set as 20 × 20 pixels, 45 and 26 respectively
- For more information, please go to: https://www.sciencedirect.com/science/article/abs/pii/S0041624X20301025?via%3Dihub



Real-time Kidney Power Doppler Imaging



B-mode Image

Reference: Lok UW et al., Ultrasonics 2020 Sep; 107:106163.