Conclusion

The implementation of several cellular automata yields a comparison and shows significant performance improvement for a sepcific type of CA. Preferable is linear state space of medium size ($\leq 2^8$) and a transition function that involves numerical operations rather than table lookup or boolean operations.

However, cellular automata which have a very small state space perform poorly in comparison to regular CPUs because they cannot benefit from packing the states into bit vectors.

On the other hand, cellular automata that have virtually infinite state space need too much memory and the hardware is not yet optimized for this setting.

References

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[2] nVidia Developer SDK. http://developer.nvidia.com/

[3] http://www.jsingler.de/cagpu (Further information concerning this poster)