

Optimization of Eigenvalue Calculations within Quantum-dot Cellular Automata Stray Charge Simulations

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Simulations for quantum computing typically involve the computation of a large number of eigenvalues of large matrices. This effort focuses on optimization of these calculations using algorithms tailored to the specific characteristics of typical matrices found in these simulations. Currently, computations which heretofore required over 30 hours of simulation time have been reduced to less than 3 hours.

Information about the Author:

Taylor Baldwin is presently a junior in electrical engineering at Valparaiso University. He has been working with eigenvalue calculation optimization for six months in an independent research project. Taylor is a member of IEEE, the electrical engineering student society, and Tau Beta Pi, the engineering honors fraternity. He is president of VU Students for Life.

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