

Project Summary

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Erik Talvitie is working with Jim Crutchfield and the Computational Mechanics Group on extending computational mechanics techniques into the second dimension (and beyond). While these techniques have been tremendously successful in analyzing one-dimensional data, it is not obvious how they might be employed in studying two-dimensional systems. Focusing on the analysis of cellular automata, He is exploring possible methods of creating a data stream from two-dimensional data and the various tradeoffs associated therewith. Other issues include extending the domain/particle-type analysis used on one-dimensional CA to two-dimensional CA and creating visualization techniques to highlight the dynamics of two-dimensional CA. The goal is to move toward an extension of computational mechanics that is both useful and practical in analyzing two-dimensional systems.