

1145-06-2701 **L. Markowsky*** (lmarkowsky@gmail.com) and **G. Markowsky**. *The Lattice Data Analytics Toolkit*. Preliminary report.

The Lattice Data Analytics Toolkit is made available to support the use and visualization of two novel lattice-theoretic data exploration and analytic algorithms, to be called lattice data analytics. This free, open-source Python toolkit (with underlying implementation of key functions in C/C++), features tools for lattice data analytics as well as interactive visualization methods for lattices and posets, and will enable researchers and developers to rapidly produce systems that leverage the novel data analysis technique. The Carver2 target rating program, which includes a small dataset of partially ordered potential targets, is used to illustrate the functionality of the toolkit, producing publication-quality visualizations of the lattice and the poset of irreducibles (PoI) generated by the dataset. Future work includes the production of similar toolkits for the Octave/MATLAB and R environments. (Received September 25, 2018)