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(REMOTE) CLUEstering: a novel density-based weighted clustering library

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CLUEstering is a versatile clustering library based on CLUE, a density-based, weighted clustering algorithm optimized for high-performance computing. The library offers a user-friendly Python interface and a C++ backend to maximize performance. CLUE's parallel design is tailored to exploit modern hardware accelerators, enabling it to process large-scale datasets with exceptional scalability and speed.
To ensure performance portability across diverse architectures, the backend is implemented using the Alpaka library, a C++ performance portability library that enables near-native performance on a wide range of accelerators with minimal code duplication.
CLUEstering's unique combination of density-based and weighted clustering makes it a standout among popular clustering algorithms, many of which lack built-in support for such combination. This hybrid approach unlocks new possibilities for applications in fields such as high-energy physics, image processing, and complex system analysis.

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