

Flow cytometry allows inexpensive monitoring of large and diverse cell populations using fluorescent markers, providing immense applications in studying biological properties of blood and tissues as well as diagnostics in the clinical setting. Recent methodological advances highlight automatic clustering as a tool of choice for data analysis, and many clustering algorithms were developed for various use cases. However, the applicability of such algorithms in biology and medicine remains challenging unless the tools expose user-friendly, interactive interfaces that are accessible to domain experts. The goal of the thesis is to review the available methods that allow such interaction and supervision of the clustering process by the user, specifically focusing on interfaces desirable in clinical settings that do not require the user to interact with programming environments. As the main practical result, the thesis should design a new tool that builds upon previously developed methodology (iDendro, gMHCA), allowing the application of the researched methodology on real datasets. By using proper data visualization techniques, the end user should be able to interact with the dataset in a way that is both intuitive and useful for producing biologically relevant results.