RooFit is a library of about 170 C++ classes that facilitate data modeling in the ROOT environment. Mathematical concepts such as variables, (probability density) functions and integrals are represented as C++ objects. The package provides a flexible framework for building complex fit models through classes that mimic math operators, and is straightforward to extend. For all constructed models RooFit provides a concise yet powerful interface for fitting (binned and unbinned likelihood, chi^2), plotting and toy Monte Carlo generation as well as sophisticated tools to manage large scale projects.

RooFit does not aim to reinvent or reimplement existing numeric techniques, it imports or links to existing tools such as Minuit and the GSL math library. Its unique strength is that it provides a concise, consistent and easy-to-use interface to the user that promotes the use of the best possible techniques for many applications in situations where it is often deemed 'too much work' to do it right. RooFit has been used for over 5 years in the BaBar collaboration where it has been so successful that it has become the de facto standard modeling tool for most analyses published by the collaboration. RooFit has recently been included in the standard ROOT distribution.