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Stan: A Platform for Scalable Bayesian Inference

Stan is a collection of state-of-the-art computational tools to facilitate the specification and fitting of the complex Bayesian models that arise at the frontiers of applied statistics. A high-performance math and statistics library written in C++ is exposed to users via interfaces to the command line, R, Python, and a rapidly growing list of other popular analysis environments. By automating statistical computation, Stan allows users to focus their efforts on exploiting their domain expertise to build more sophisticated models and better analyses. Academic fields as diverse as psychology, political science, ecology, astronomy, and physics, amongst many others, have used Stan to build analyses novel to their fields. Similarly, Stan is an increasingly powerful tool in industries spanning pharmacology and medicine to social media and entertainment to real estate and finance.