The Reproducible Research Movement in Statistics

Victoria Stodden
Department of Statistics
Columbia University
vcs@stodden.net

It is now widely recognized that the traditional published article is insufficient to permit verification of computational results. The emergence of powerful computational hardware combined with vast data collection and storage capabilities presents many novel opportunities for researchers. Unfortunately the standards for communication of published computational findings have evolved in ways that make verification and validation next to impossible and impede the ability of others to build on past research. A movement toward reproducible research – dissemination that includes sufficient experimental details such that results can be replicated by others in the field, i.e. the code and the data – has developed in many disciplines and research areas to address this shortcoming in research. In this paper I will present a jointly developed set of standards to guide the dissemination of reproducible research, and discuss changes originating outside academia that affect computational and empirical research dissemination including recent journal publication and federal agency dissemination requirements.

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