

NIPS 2012 Workshop on Perturbations, Optimization, and Statistics
December 8, 2012 at Lake Tahoe, Nevada, U.S.A.
Web Site: <http://www.stat.ucla.edu/~gpapan/pos12/>

Overview

In nearly all machine learning tasks there exists randomness, or noise, in the observed data and in the relationships encoded by the model. Often this noise is considered undesirable and would be eliminated if possible. However, there is an emerging body of work on perturbation methods, showing the benefits of modeling, learning, and inference pipelines that explicitly consider the addition of noise. Perturbation methods provide a principled way to reason about neighborhoods of possible outcomes when trying to make a decision which, for example, is robust to small changes in model parameters or needs to account for a lack of knowledge by averaging over different possible outcomes. Recently, several works influenced by diverse fields of research such as statistics, optimization, machine learning, and theoretical computer science, have used perturbation methods in similar ways. The workshop aims to bring together the growing community of researchers interested in various aspects of this area, to broaden our understanding of why and how perturbation methods can be useful, and to explore applications of these methods in areas such as computer vision and language modeling.

Call for Papers

In addition to a program of invited presentations, we solicit contribution of short papers that explore perturbation-based methods in the context of topics such as: statistical modeling, sampling, inference, estimation, theory, robust optimization, robust learning. We are interested in both theoretical and application-oriented works. We also welcome papers that explore connections between alternative ways of using perturbations.

Contributed papers should adhere to the NIPS format and are encouraged to be up to four pages long (without counting the list of references). Papers submitted for review do not need to be anonymized. There will be no official proceedings. Thus, apart from papers reporting novel unpublished work, we also welcome submissions describing work in progress or summarizing a longer paper under review for a journal or conference (this should be clearly stated though). Accepted papers will be presented as posters; some may also be selected for spotlight talks.

Please submit papers in PDF format by email to posNIPS2012@gmail.com. The submission deadline has been extended to *October 19, 2012* and notifications of acceptance will be sent by *October 28, 2012*. At least one of the authors must be attending the workshop to present the work.

Confirmed Invited Speakers

[Ryan Adams](#) (Harvard), [Amir Globerson](#) (HUJI), [Tommi Jaakkola](#) (MIT), [Andrea Montanari](#) (Stanford), [Yuval Peres](#) (Microsoft Research), [Pascal Vincent](#) (Montreal), [Max Welling](#) (UCI), [Alan Yuille](#) (UCLA).

Organizers

[Tamir Hazan](#) (TTI-C), [George Papandreou](#) (UCLA), [Danny Tarlow](#) (Univ. of Toronto).