

NIPS*2007 – Preliminary Call for Papers

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PRELIMINARY CALL FOR PAPERS -- NIPS*2007

Deadline for Paper Submissions: June 8, 2007

Conference Site: <http://nips07.stanford.edu>

Submissions are solicited for the Twenty First Annual meeting of an interdisciplinary Conference (December 3–6) which brings together researchers interested in all aspects of neural and statistical processing and computation. The Conference will include invited talks as well as oral and poster presentations of refereed papers. It is single track and highly selective. Preceding the main Conference will be one day of Tutorials (December 3), and following it will be two days of Workshops at Whistler/Blackcomb ski resort (December 7–8).

Invited Speakers: To be announced.

Tutorial Speakers: To be announced.

Submissions: Papers are solicited in all areas of neural information processing and statistical learning, including (but not limited to) the following:

- Algorithms and Architectures: statistical learning algorithms, neural networks, kernel methods, graphical models, Gaussian processes, dimensionality reduction and manifold learning, model selection, combinatorial optimization.
- Applications: innovative applications or fielded systems that use machine learning, including systems for time series prediction, bioinformatics, text/web analysis, multimedia processing, and robotics.
- Brain Imaging: neuroimaging, cognitive neuroscience, EEG (electroencephalogram), ERP (event related potentials), MEG (magnetoencephalogram), fMRI (functional magnetic resonance imaging), brain mapping, brain segmentation, brain computer interfaces.

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- Cognitive Science and Artificial Intelligence: theoretical, computational, or experimental studies of perception, psychophysics, human or animal learning, memory, reasoning, problem solving, natural language processing, and neuropsychology.
- Control and Reinforcement Learning: decision and control, exploration, planning, navigation, Markov decision processes, game-playing, multi-agent coordination, computational models of classical and operant conditioning.
- Hardware Technologies: analog and digital VLSI, neuromorphic engineering, computational sensors and actuators, microrobotics, bioMEMS, neural prostheses, photonics, molecular and quantum computing.
- Learning Theory: generalization, regularization and model selection, Bayesian learning, spaces of functions and kernels, statistical physics of learning, online learning and competitive analysis, hardness of learning and approximations, large deviations and asymptotic analysis, information theory.
- Neuroscience: theoretical and experimental studies of processing and transmission of information in biological neurons and networks, including spike train generation, synaptic modulation, plasticity and adaptation.
- Speech and Signal Processing: recognition, coding, synthesis, denoising, segmentation, source separation, auditory perception, psychoacoustics, dynamical systems, recurrent networks, Language Models, Dynamic and Temporal models.
- Visual Processing: biological and machine vision, image processing and coding, segmentation, object detection and recognition, motion detection and tracking, visual psychophysics, visual scene analysis and interpretation.

Review Criteria: As in the last year, NIPS submissions will be reviewed double-blind: the reviewers will not know the identities of the authors. Submissions will be refereed on the basis of technical quality, novelty, potential impact on the field, and clarity. There will be an opportunity after the meeting to revise accepted manuscripts. We particularly encourage submissions by authors new to NIPS, as well as application papers that combine concrete results on novel or previously unachievable applications with analysis of the

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underlying difficulty from a machine learning perspective. Submission Instructions: NIPS accepts only electronic submissions at

<http://nips2007.confmaster.net>

These submissions must be in PDF format. The Conference web site will accept electronic submissions until midnight June 8, 2007, Pacific daylight time.

Demonstrations: There is a separate Demonstration track at NIPS. Authors wishing to submit to the Demonstration track should consult the Conference web site.

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