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This issue's "Reader's Choice" contains a list of articles published by the IEEE Signal Processing Society (SPS) that ranked among the top 100 most downloaded IEEE *Xplore* articles from November 2007 to April 2008. The highest rank obtained by an article in this time frame is indicated in bold. The list is also available by point and click at http://apollo.ee.columbia.edu/spm/?i=external/readerschoice. Your suggestions and comments are welcome and should be sent to the Associate Editor Berna Erol (berna_erol@yahoo.com). SP

TITLE, AUTHOR, PUBLICATION YEAR IEEE SPS JOURNALS	ABSTRACT	RANK IN IEEE TOP 100 (NOV 2007–APR 2008) APR	MAR	FEB	JAN	DEC	NOV	*N* TIMES IN TOP 100 SINCE JAN 2006
"WHITENEDFACES" RECOGNITION WITH PCA AND ICA Liao, L.Z.; Luo, S.W.; Tian, M. *IEEE Signal Processing Letters*, vol. 14, no. 12, Dec. 2007, pp. 1008–1011	This article presents a simple and effective whitening method for flattening the power-law power spectrum of face images and combines the whitening technique and PCA/ICA for face recognition.	**1**						1
A TUTORIAL ON PARTICLE FILTERS FOR ONLINE NONLINEAR/NON-GAUSSIAN BAYESIAN TRACKING Arulampalam, M.S.; Maskell, S.; Gordon, N.; Clapp, T. *IEEE Transactions on Signal Processing*, vol. 50, no. 2, Feb. 2002, pp. 174–188	This article reviews both optimal and suboptimal Bayesian algorithms for non-linear/ non-Gaussian tracking problems, with a focus on particle filters.	28	34	31	**15**	21	32	21
THE MOBILE BROADBAND WiMAX STANDARD Teo, K.H.; Tao, Z.; Zhang, J. *IEEE Signal Processing Magazine,* vol. 24, no. 5, Sep. 2007, pp. 144–148	This article presents the Mobile WiMAX standard, the technologies deployed for the air interface and the network, and the development of the standards to support mobile multihop relays in a WiMAX network.	43	43	**28**	30		95	5
AN INTRODUCTION TO COMPRESSIVE SAMPLING Candes, E.J.; Wakin, M.B. *IEEE Signal Processing Magazine,* vol. 25, no. 2, Mar. 2008, pp. 21–30	This article surveys the theory of compressive sampling, also known as compressed sensing, a novel sensing/sampling paradigm.	**48**						1
A TUTORIAL ON FAST FOURIER SAMPLING Gilbert, A.C.; Strauss, M.J.; Tropp, J.A. *IEEE Signal Processing Magazine,* vol. 25, no. 2, March 2008, pp. 57–66	This article describes a Fourier sampling algorithm that takes a small number of (correlated) random samples from a signal and processes them efficiently to produce an approximation of the DFT of the signal.	**54**						1
IMAGING VIA COMPRESSIVE SAMPLING Romberg, J. *IEEE Signal Processing Magazine,* vol. 25, no. 2, March 2008, pp. 14–20	This article introduces compressive sampling and recovery using convex programming.	**76**						1

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TITLE, AUTHOR, PUBLICATION YEAR IEEE SPS JOURNALS	ABSTRACT	RANK IN IEEE TOP 100 (NOV 2007–APR 2008) APR	MAR	FEB	JAN	DEC	NOV	*N* TIMES IN TOP 100 SINCE JAN 2006
WHY GAUSSIANITY Kim, K.; Shevlyakov, G. *IEEE Signal Processing Magazine,* vol. 25, no. 2, March 2008, pp. 102–113	This article tries to answer the question: "Why the ubiquitous use and success of the Gaussian distribution law?".	**77**						1
ADAPTIVE BILATERAL FILTER FOR SHARPNESS ENHANCEMENT AND NOISE REMOVAL Zhang, B; Allebach, J.P. *IEEE Transactions on Image Processing,* vol. 17, no. 5, May 2008, pp. 664–678	This paper presents the adaptive bilateral filter (ABF) for sharpness enhancement and noise removal. The ABF sharpens an image by increasing the slope of the edges without producing overshoot or undershoot.	**81**						1
SPARSE SAMPLING OF SIGNAL INNOVATIONS Blu, T.; Dragotti, P.L; Vetterli, M.; Marziliano, P.; Coulot, L. *IEEE Signal Processing Magazine,* vol. 25, no. 2, 2008, pp. 31–40	This article addresses sparse sampling of continuous-time sparse signals. It is shown that sampling at the rate of innovation is possible, in some sense applying Occam's razor to the sampling of sparse signals.	**86**						1
OPTIMAL LINEAR COOPERATION FOR SPECTRUM SENSING IN COGNITIVE RADIO NETWORKS Quan, Z.; Cui, S.; Sayed, A.H. *IEEE Journal of Selected Topics in Signal Processing,* vol. 2, no. 1, Feb. 2008, pp. 28–40	This article proposes an optimal linear cooperation framework for spectrum sensing in order to accurately detect the weak primary signal.	94	**86**					2
SUPER-RESOLUTION IMAGE RECONSTRUCTION: A TECHNICAL OVERVIEW Park, S.C.; Park, M.K.; Kang, M.G. *IEEE Signal Processing Magazine,* vol. 20, no. 3, May 2003, pp. 21–36	This article presents the technical review of various existing super resolution (SR) methodologies and models the low-resolution (LR) image acquisition process.	98		**61**				2
DISCRIMINATING BETWEEN PITCHED SOURCES IN MUSIC AUDIO Every, M. R. *IEEE Transactions on Audio, Speech, and Language Processing,* vol. 16, no. 2, Feb. 2008, pp. 267–277	This article addresses the problem of identifying different sources within polyphonic music, which has direct relevance to music content description and information retrieval applications.			**22**				1
WIRELESS PROFILED TCP PERFORMANCE OVER INTEGRATED WIRELESS LANs AND CELLULAR NETWORKS Rutagemwa, H.; Shi, M.; Shen, X.; Mark, J.W. *IEEE Transactions on Wireless Communications,* vol. 6, no. 6, June 2007, pp. 2294–2304	This article proposes an analytical framework for studying the performance of wireless profiled TCP (WP-TCP) flows over the integrated wireless LAN and cellular networks.			**33**				1
ROBUST SPEAKER RECOGNITION IN NOISY CONDITIONS Ming, J.; Hazen, T.J.; Glass, J.R.; Reynolds, D.A. *IEEE Transactions on Audio, Speech, and Language Processing,* vol. 15, no. 5, July 2007, pp. 1711–1723	This paper investigates the problem of speaker identification and verification in noisy conditions, assuming that speech signals are corrupted by environmental noise and the noise characteristics are unknown.			**62**				1
STRUCTURAL SEGMENTATION OF MUSICAL AUDIO BY CONSTRAINED CLUSTERING Levy, M.; Sandler, M. *IEEE Transactions on Audio, Speech, and Language Processing,* vol. 16, no. 2, Feb. 2008, pp. 318–326	This article describes a method of segmenting musical audio into structural sections based on a hierarchical labeling of spectral features.			**92**				1
A FAST IMAGE SUPER-RESOLUTION ALGORITHM USING AND ADAPTIVE WIENER FILTER Hardie, R. *IEEE Transactions on Image Processing,* vol. 16, no. 12, Dec. 2007, pp. 2953–2964	This article proposes a super-resolution algorithm using a type of adaptive Wiener filter. The proposed algorithm is computationally efficient and lends itself to parallel implementation.			98		**94**		2

TITLE, AUTHOR, PUBLICATION YEAR IEEE SPS JOURNALS	ABSTRACT	RANK IN IEEE TOP 100 (NOV 2007–APR 2008) APR	MAR	FEB	JAN	DEC	NOV	*N* TIMES IN TOP 100 SINCE JAN 2006
SEGMENTATION AND MEASUREMENT OF THE CORTEX FROM 3-D MR IMAGES USING COUPLED-SURFACES PROPAGATION Zeng, X.; Staib, L.H.; Schultz, R.T.; Duncan, J.S. *IEEE Transactions on Medical Imaging,* vol. 18, no. 10, Oct. 1999, pp. 927–937	This article presents a new approach of coupled-surfaces propagation for segmentation and measurement of MR images. Their approach uses nearly constant thickness of the cortical mantle as an important constraint.				**11**			1
MIMO RADAR WITH WIDELY SEPARATED ANTENNAS Haimovich, A.M.; Blum, R.S.; Cimini, L.J. *IEEE Signal Processing Magazine,* vol. 25, no. 1, Jan. 2008, pp. 116–129	This article reviews some recent work on MIMO radar with widely separated antennas, which capture the spatial diversity of the target's radar cross section.				**39**			1
IMAGE-PROCESSING TECHNIQUE FOR SUPPRESSING RIBS IN CHEST RADIOGRAPHS BY MEANS OF MASSIVE TRAINING ARTIFICIAL NEURAL NETWORK (MTANN) Suzuki, K.; Abe, H.; MacMahon, H.; Doi, K. *IEEE Transactions on Medical Imaging,* vol. 25, no. 4, Apr. 2006, pp. 406–416	This article presents an image-processing technique for suppressing the contrast of ribs and clavicles in chest radiographs via using an MTANN, which is a nonlinear filter that is trained using input chest radiographs.				**59**			1
SPARSE REPRESENTATION FOR COLOR IMAGE RESTORATION Mairal, J.; Elad, M.; Sapiro, G. *IEEE Transactions on Image Processing,* vol. 17, no. 1, Jan. 2008, pp. 53–69	This article addresses the problem of learning dictionaries for color images and extends the previously described K-SVD-based grayscale image denoising algorithm.				**76**			1
TECHNOLOGY AND SIGNAL PROCESSING FOR BRAIN-MACHINE INTERFACES Sanchez, J.C.; Principe, J.C.; Nishida, T.; Bashirullah, R.; Harris, J.G.; Fortes, J.A.B. *IEEE Signal Processing Magazine,* vol. 25, no. 1, Jan. 2008, pp. 29–40	This article presents a set of grand challenges for brain-machine interfaces and investigates recent advances in neurotechnology and signal processing methods to overcome them.				**80**			1
TOP DOWNLOADS IN IEEE *XPLORE* Erol, B. *IEEE Signal Processing Magazine,* vol. 25, no. 1, Jan. 2008, pp. 14–15	This magazine column lists the top 100 downloaded articles published by the Signal Processing Society in recent months.				**84**			2
A REVIEW OF GEOMETRIC TRANSFORMATIONS FOR NONRIGID BODY REGISTRATION Holden, M. *IEEE Transactions on Medical Imaging,* vol. 27, no. 1, Jan. 2008, pp. 111–128	This article provides a comprehensive and quantitative review of spatial transformations models for nonrigid image registration.				**88**			1
MAXIMUM FLOW AND NETWORK CAPACITY OF NETWORK CODING FOR AD-HOC NETWORKS Wang, H.; Fan, P.; Letaief, K.B.; *IEEE Transactions on Wireless Communications,* vol. 6, no. 12, Dec. 2007, pp. 4193–4198	This letter focuses on the statistical properties of the maximum flow or the capacity of network coding for ad-hoc networks based on random graph models.					**93**		1
AN INTRODUCTION TO HIDDEN MARKOV MODELS Rabiner, L.; Juang, B. *IEEE Transactions on Acoustics, Speech, and Signal Processing,* vol. 3, no. 1, Jan. 1986, pp. 4–16	This article presents an introduction to the theory of Markov models and illustrates how they have been applied to speech recognition problems.					**97**		2
PERFORMANCE EVALUATION OF THE IEEE 802.16 MAC FOR QoS SUPPORT Cicconetti, C.; Erta, A.; Lenzini, L.; Mingozzi, E. *IEEE Transactions on Mobile Computing,* vol. 6, no. 1, Jan. 2007, pp. 26–38	This article aims at verifying the effectiveness of different scheduling services provided by the IEEE 802.16 standard in managing traffic generated by data and multimedia sources.						**70**	8

TITLE, AUTHOR, PUBLICATION YEAR IEEE SPS CONFERENCES	ABSTRACT	RANK IN IEEE TOP 100 (NOV 2007–APR 2008) APR	MAR	FEB	JAN	DEC	NOV	*N* TIMES IN TOP 100 SINCE JAN 2006
LANGUAGE IDENTIFICATION USING ACOUSTIC MODELS AND SPEAKER COMPENSATED CEPSTRAL-TIME MATRICES Castaldo, F.; Dalmasso, E.; Laface, P.; Colibro, D.; Vair, C. *IEEE International Conference on Acoustics, Speech and Signal Processing,* vol. 4, Apr. 2007, pp. 1013–1016	This conference article presents a new set of time-frequency features for language identification and improves performance by estimating a subspace that represents the distortions and compensating for them.			**12**				1
BIAS ESTIMATION AND CORRECTION IN A CLASSIFIER USING PRODUCT OF LIKELIHOOD-GAUSSIANS Nagarajan, T.; O'Shaughnessy, D. *IEEE International Conference on Acoustics, Speech and Signal Processing,* vol. 3, Apr. 2007, pp. 1061–1064	This conference article proposes a discriminant measure using a product of Gaussian likelihoods, to estimate the amount of bias that may occur towards a specific class in classification tasks.			**29**				1
STATISTICALLY DRIVEN SPARSE IMAGE APPROXIMATION Figueras i Ventura, R.M.; Simoncelli, E.P. *IEEE International Conference on Image Processing,* vol. 1, Sep. 2007, pp. 461–464	This conference article proposes a method based on a locally adaptive threshold operation for sparse image approximation that was motivated by recent developments in statistical image modeling.			**34**				1
N-BEST TOKENIZATION IN A GMM-SVM LANGUAGE IDENTIFICATION SYSTEM Yang, X.; Siu, M. *IEEE International Conference on Acoustics, Speech and Signal Processing,* vol. 4, Apr. 2007, pp. 1005–1008	This conference article extends the n-best tokenization approach to GMM-based language identification systems with either maximum likelihood (ML) trained or SVM-based language models.			**63**				1
NORMALIZATION OF MODULATION FEATURES FOR SPEAKER RECOGNITION Thiruvaran, T.; Ambikairajah, E.; Epps, J. *International Conference on Digital Signal Processing,* vol. 1, July 2007, pp. 599–602	This conference article examines normalization of frequency modulation (FM) based features using feature warping, which are emerging as an alternative to more conventional magnitude-based features for speech processing applications.			**87**				1
ARQ STRATEGIES FOR 2 × 2 SPATIALLY MULTIPLEXED MIMO SYSTEMS de Carvalho, E.; Popovski, P. *Asilomar Conference on Signals, Systems and Computers,* vol. 1, Oct. 2006, pp. 1666–1670	This conference article presents packet retransmission strategies for MIMO spatial multiplexing (SM) systems with independent coding and independent ARQ processes per stream.					**61**		1

president's **MESSAGE** continued from page 6

method favors a Society/Council based on actual use (downloads) of a conference paper, as opposed to its mere existence. The main argument favoring this system is that the users define (for better or worse) the relevancy of the content. The main argument against it was the change in fortunes some societies/councils will experience. Regardless of the merits of either argument, the vote, at the end of the day, indicated (awesomely) a sense that 50 people agreed to disagree, and the walls were still standing. The motion carried.

P.S. Reader Michael Hasak commenting on my March column refers that a major obstacle to a wider appreciation of the field is the term "signal processing" itself. Paraphrasing Michael, the magic of the field is its function: enabling machines to interact directly with the natural world. People already within the field may know what is meant by "signal," and what is meant by "processing," but who of any disciplinary distance would guess that it denoted the auditory and visual cortices of the future? Obviously, such an established discipline can't simply be renamed. But recognizing this shortcoming of the name may help with addressing the concern raised in the column. Thanks Michael. [SP]