

# List of Publications

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## Citation statistics

Source: Google Scholar ([click here](#)), January 11, 2015.

	All	Since 2009
Citations	440	410
h-index	11	11
i10-index	12	11

## Summary statistics of publications

Published journal papers	25
Published conference papers	54
Total published papers	79
Journal papers under review	6
Journal papers in preparation	4
Conference papers under review	3
Conference papers in preparation	1
Total articles (including published, under review and in preparation)	93

## Topic wise statistics of publications (only published papers)

Topic	Conference	Journal	Total
Bioinformatics	0	1	1
Speech processing (coding, enhancement and automatic speech recognition)	18	9	27
Sparse systems (compressed sensing and low-rank-matrix reconstruction)	27	10	37
Machine learning and statistical signal processing	5	4	9
Statistical physics and information theory based analysis	4	1	5
Total published papers	53	25	79

## List shown in year and subject wise

### 1. Peer-reviewed original articles (journals)

#### 2007

##### Speech processing (speech coding)

- [SC1] **S. Chatterjee** and T.V. Sreenivas, "Conditional PDF-based split vector quantization of wideband LSF parameters", *IEEE Signal Processing Letters*, vol. 14, No. 9, pp. 641- 644, September 2007.
- [SC2] **S. Chatterjee** and T.V. Sreenivas, "Analysis of conditional PDF based split VQ", *IEEE Signal Processing Letters*, vol. 14, No. 11, pp. 781-784, November 2007.

#### 2008

##### Speech processing (speech coding)

- [SC3] **S. Chatterjee** and T.V. Sreenivas, "Switched conditional PDF-based split VQ using Gaussian mixture model", *IEEE Signal Processing Letters*, vol. 15, pp. 91-94, 2008.
- [SC4] **S. Chatterjee** and T.V. Sreenivas, "Predicting VQ performance bound for LSF coding", *IEEE Signal Processing Letters*, vol. 15, pp. 166-169, 2008.

- [SC5] **S. Chatterjee** and T.V. Sreenivas, “Optimum transform domain split VQ”, *IEEE Signal Processing Letters*, vol. 15, pp. 285-288, 2008.
- [SC6] **S. Chatterjee** and T.V. Sreenivas, “Optimum switched split vector quantization of LSF parameters”, *Signal Processing*, vol. 88, Issue 6, pp. 1528-1538, June 2008.

## 2009

### Speech processing (speech coding)

- [SC7] **S. Chatterjee** and T.V. Sreenivas, “Reduced complexity two stage vector quantization”, *Digital Signal Processing*, vol. 19, pp. 476-490, May 2009.

## 2011

### Speech processing (automatic speech recognition)

- [SC8] **S. Chatterjee** and W.B. Kleijn, “Auditory model based design and optimization of feature vectors for automatic speech recognition”, *IEEE Trans. Audio, Speech, Language Processing*, vol. 19, Issue 6, pp. 1813-1825, August 2011.

## 2012

### Statistical physics and information theory based analysis

- [SC9] Y. Kabashima, M. Vehkaperä and **S. Chatterjee**, “Typical  $l_1$ -recovery limit of sparse vectors represented by concatenation of random orthogonal matrices”, *Journal of Statistical Mechanics: Theory and Experiments*, P12003, 2012.

### Machine learning and statistical signal processing

- [SC10] J.T. Flåm, **S. Chatterjee**, K. Kansanen and T. Ekman, “On MMSE estimation - A linear model under Gaussian mixture statistics”, *IEEE Trans. Signal Processing*, vol. 60, Issue 7, pp. 3840-3845, 2012.

### Sparse systems (compressed sensing and low-rank-matrix reconstruction)

- [SC11] **S. Chatterjee**, D. Sundman, M. Vehkaperä and M. Skoglund, “Projection-based and look ahead strategies for atom selection”, *IEEE Trans. Signal Processing*, Vol. 60, Issue 2, pp. 634-647, 2012.
- [SC12] D. Zachariah, M. Sundin, M. Jansson and **S. Chatterjee**, “Alternating least-squares for low-rank matrix reconstruction”, *IEEE Signal Processing Letters*, vol. 19, Issue 4, pp. 231-234, 2012.
- [SC13] D. Zachariah, **S. Chatterjee** and M. Jansson, “Dynamic iterative pursuit”, *IEEE Trans. Signal Processing*, vol. 60, Issue 9, pp. 4967-4972, 2012.

## 2013

### Machine learning and statistical signal processing

- [SC14] D. Zachariah, P. Wirfält, M. Jansson and **S. Chatterjee**, “Line spectrum estimation with probabilistic priors”, *Signal Processing*, vol. 93, Issue 11, pp. 2969-2974, 2013.
- [SC15] J.T. Flåm, D. Zachariah, Mikko Vehkaperä and **S. Chatterjee**, “The linear model under mixed Gaussian inputs: Designing the transfer matrix”, *IEEE Trans. Signal Processing*, vol. 61, Issue 21, pp. 5247-5259, 2013.

### Sparse systems (compressed sensing and low-rank-matrix reconstruction)

- [SC16] S.K. Ambat, **S. Chatterjee**, and K.V.S Hari, “Fusion of algorithms for compressed sensing”, *IEEE Trans. Signal Processing*, vol. 61, Issue 14, pp. 3699-3704, 2013.

- [SC17] A. Shirazinia, **S. Chatterjee** and M. Skoglund, “Analysis-by-synthesis quantization for compressed sensing measurements”, *IEEE Trans. Signal Processing*, vol. 61, Issue 2, pp. 5789-5800, 2013.

## 2014

### Bioinformatics

- [SC18] **S. Chatterjee**, D. Koslicki, S. Dong, N. Innocenti, L. Cheng, Y. Lan, M. Vehkaperä, M. Skoglund, L.K. Rasmussen, E. Aurell and J. Corander, “SEK: Sparsity exploiting  $k$ -mer-based estimation of bacterial community composition”, *Bioinformatics*, 2014.

### Speech processing (speech coding)

- [SC19] Z. Ma, **S. Chatterjee**, W.B. Kleijn and J. Guo, “Dirichlet mixture modeling to estimate an empirical lower bound for LSF quantization”, *Signal Processing*, vol. 104, pp. 291-295, 2014.

### Machine learning and statistical signal processing

- [SC20] D. Zachariah, N. Shariati, M. Bengtsson, M. Jansson and **S. Chatterjee** “Estimation for the linear model with uncertain covariance matrices”, *IEEE Trans. Signal Processing*, vol. 62, Issue 6, pp. 1525-1535, 2014.

### Sparse systems (compressed sensing and low-rank-matrix reconstruction)

- [SC21] S.K. Ambat, **S. Chatterjee**, and K.V.S Hari, “Progressive fusion of reconstruction algorithms for low latency applications in compressed sensing”, *Signal Processing*, vol. 97, Issue 4, pp. 146-151, 2014.
- [SC22] D. Sundman, **S. Chatterjee**, and M. Skoglund, “Methods for distributed compressed sensing”, *Journal of Sensor and Actuator Networks*, Issue 3(1), pp. 1-25, 2014 (**Invited paper**).
- [SC23] S.K. Ambat, **S. Chatterjee**, and K.V.S Hari, “A committee machine approach for compressed sensing reconstruction”, *IEEE Trans. Signal Processing*, vol. 62, Issue 7, pp. 1705-1717, 2014.
- [SC24] D. Sundman, **S. Chatterjee** and M. Skoglund, “Distributed greedy pursuit algorithms”, *Signal Processing*, vol. 105, Issue 0, pp. 298-315, 2014.
- [SC25] A. Shirazinia, **S. Chatterjee** and M. Skoglund, “Joint source-channel vector quantization for compressed sensing”, *IEEE Trans. Signal Processing*, vol. 62, Issue 14, pp. 3667-3681, 2014.

### Submitted journal papers under peer review

- [SC26] M. Vehkaperä, Y. Kabashima and **S. Chatterjee**, “Analysis of regularized LS reconstruction and random matrix ensembles in compressed sensing”, *submitted to IEEE Trans. Information Theory*, website:<http://arxiv.org/abs/1312.0256>.
- [SC27] A. Shirazinia, **S. Chatterjee** and M. Skoglund, “Distributed quantization for measurement of correlated sparse sources over noisy channels”, *submitted*.
- [SC28] D. Sundman, **S. Chatterjee** and M. Skoglund, “DIPP – A greedy algorithm for distributed compressed sensing and RIP based analysis”, *submitted*, website:<http://arxiv.org/abs/1403.6974>.
- [SC29] D. Sundman, **S. Chatterjee** and M. Skoglund, “Analysis of voting principles used in distributed greedy algorithms”, *submitted*.
- [SC30] K. Li, M. Sundin, C. R. Rojas, **S. Chatterjee** and M. Jansson, “Alternating strategies are good for low-rank matrix reconstruction”, *submitted*.
- [SC31] M. Sundin, **S. Chatterjee** and M. Jansson, “Combined modeling of sparse and dense noise for improvement of relevance vector machine”, *submitted*.

### Journal papers under preparation (soon be ready for submission)

- [SC32] **S. Chatterjee**, D. Sharivar, D. Koslicki, A. Walker, M. Vehkaperä, M. Skoglund, E. Aurell and J. Corander, “ARK: Aggregation of reads by K-means for estimation of bacterial community composition”, *will be submitted to Bioinformatics*.

- [SC33] M. Sundin, C.R. Rojas, M. Jansson and **S. Chatterjee**, “Low-rank Bayesian learning”, *will be submitted to IEEE Trans. Signal Processing*.
- [SC34] A. Zaki, **S. Chatterjee** and L.K. Rasmussen, “Universal algorithm for compressive sampling”, *will be submitted to IEEE Trans. Signal Processing*.
- [SC35] A. Venkitaraman, **S. Chatterjee**, M. Jansson and P. Händel, “On the Hilbert transform of signals on graphs”, *will be submitted to IEEE Signal Processing Letters*.

## 2. Peer-reviewed conference contributions

### 2005

#### Speech processing (speech coding)

- [SC36] **S. Chatterjee** and T.V. Sreenivas, “A mixed-split scheme for 2D-DPCM based LSF quantization”, in TEN-CON 2005, Melbourne, Australia.

### 2006

#### Speech processing (speech coding)

- [SC37] **S. Chatterjee** and T.V. Sreenivas, “Two stage transform vector quantization of LSFs for wideband speech coding”, in Conference of the International Speech Communication Association (INTERSPEECH) 2006, Pittsburgh, USA.
- [SC38] **S. Chatterjee** and T.V. Sreenivas, “Comparison of prediction based LSF quantization methods using split VQ”, in Conference of the International Speech Communication Association (INTERSPEECH) 2006, Pittsburgh, USA.

### 2007

#### Speech processing (speech coding)

- [SC39] **S. Chatterjee** and T.V. Sreenivas, “Computationally efficient optimum weighting function for vector quantization of LSF parameters”, in ISSPA 2007, Sharjah, UAE.
- [SC40] **S. Chatterjee** and T.V. Sreenivas, “Joint inter-frame and intra-frame predictive coding of LSF parameters”, in ISSPA 2007, Sharjah, UAE.
- [SC41] **S. Chatterjee** and T.V. Sreenivas, “Sequential split vector quantization of LSF parameters using conditional PDF”, in IEEE conf. Acoustics, Speech and Signal Proc. (ICASSP) 2007, USA.
- [SC42] **S. Chatterjee** and T.V. Sreenivas, “Normalized two stage SVQ for minimum complexity wide-band LSF quantization”, in Conference of the International Speech Communication Association (INTERSPEECH) 2007, Antwerp, Belgium.
- [SC43] **S. Chatterjee** and T.V. Sreenivas, “Gaussian mixture model based switched split vector quantization of LSF parameters”, in IEEE Symposium on Signal Processing and Information Technology (ISSPIT) 2007, Egypt.

### 2008

#### Speech processing (speech enhancement)

- [SC44] A. Kundu, **S. Chatterjee** and T.V. Sreenivas, “Subspace based speech enhancement using Gaussian mixture model”, in Conference of the International Speech Communication Association (INTERSPEECH) 2008, Brisbane, Australia.
- [SC45] A. Kundu, **S. Chatterjee** and T.V. Sreenivas, “Speech enhancement using intra-frame dependency in DCT domain”, in European Signal Processing Conference (EUSIPCO) 2008, Lausanne, Switzerland.
- [SC46] A. Kundu, **S. Chatterjee**, A.S. Murthy and T.V. Sreenivas, “GMM based Bayesian approach to speech enhancement in signal/transform domain”, in IEEE conf. Acoustics, Speech and Signal Proc. (ICASSP) 2008, Las Vegas, USA.

### **Speech processing (speech coding)**

- [SC47] **S. Chatterjee** and T.V. Sreenivas, “Low complexity wide-band LSF quantization using GMM of uncorrelated Gaussian Mixtures”, in European Signal Processing Conference (EUSIPCO) 2008, Lausanne, Switzerland.

### **2009**

#### **Speech processing (automatic speech recognition)**

- [SC48] **S. Chatterjee**, C. Koniaris and W.B. Kleijn, “Auditory model based optimization of MFCCs improves automatic speech recognition performance”, in Conference of the International Speech Communication Association (INTERSPEECH) 2009, Brighton, U.K.

### **Speech processing (speech coding)**

- [SC49] **S. Chatterjee** and T.V. Sreenivas, “Analysis-by-synthesis based switched transform domain split VQ using Gaussian mixture model”, in IEEE conf. Acoustics, Speech and Signal Proc. (ICASSP) 2009, Taiwan.

### **2010**

#### **Speech processing (automatic speech recognition)**

- [SC50] C. Koniaris, **S. Chatterjee** and W.B. Kleijn, “Selecting static and dynamic features using an advanced auditory model for speech recognition”, in IEEE conf. Acoustics, Speech and Signal Proc. (ICASSP) 2010, Dallas, USA. (**Best student paper award at ICASSP 2010**).
- [SC51] **S. Chatterjee** and W.B. Kleijn, “Auditory model based modified MFCC features”, in IEEE conf. Acoustics, Speech and Signal Proc. (ICASSP) 2010, Dallas, USA.

### **Speech processing (speech coding)**

- [SC52] **S. Chatterjee** and M. Skoglund, “Structured Gaussian Mixture model based product VQ”, in European Signal Processing Conference (EUSIPCO) 2010, Denmark.

### **Sparse systems (compressed sensing and low-rank-matrix reconstruction)**

- [SC53] D. Sundman, **S. Chatterjee** and M. Skoglund, “On the use of compressive sampling for wide-band spectrum sensing”, in IEEE Symposium on Signal Processing and Information Technology (ISSPIT) 2010, Luxor, Egypt.
- [SC54] **S. Chatterjee**, D. Sundman and M. Skoglund, “Statistical post-processing improves basis pursuit denoising performance”, in IEEE Symposium on Signal Processing and Information Technology (ISSPIT) 2010, Luxor, Egypt.

### **2011**

#### **Machine learning and statistical signal processing**

- [SC55] J.T. Flåm, J. Jalden and **S. Chatterjee**, “Gaussian mixture modeling for source localization”, in IEEE conf. Acoustics, Speech and Signal Proc. (ICASSP) 2011, Prague.

### **Statistical physics and information theory based analysis**

- [SC56] M. Vehkaperä, **S. Chatterjee** and M. Skoglund, “Analysis of MMSE estimation for compressive sensing of block sparse signals”, in Information Theory Workshop (ITW) 2011, Brazil.

### **Sparse systems (compressed sensing and low-rank-matrix reconstruction)**

- [SC57] **S. Chatterjee**, D. Sundman and M. Skoglund, “Robust matching pursuit for recovery of Gaussian sparse signal”, in DSP/SPE Workshop 2011, Sedona, USA.
- [SC58] **S. Chatterjee**, D. Sundman and M. Skoglund, “Look ahead orthogonal matching pursuit”, in IEEE conf. Acoustics, Speech and Signal Proc. (ICASSP) 2011, Prague.
- [SC59] D. Sundman, **S. Chatterjee** and M. Skoglund, “Greedy pursuits of compressed sensing of jointly sparse signals”, in European Signal Processing Conference (EUSIPCO) 2011, Barcelona.
- [SC60] **S. Chatterjee**, D. Sundman, M. Vehkaperä and M. Skoglund, “Hybrid greedy pursuit”, in European Signal Processing Conference (EUSIPCO) 2011, Barcelona.
- [SC61] D. Sundman, **S. Chatterjee** and M. Skoglund, “Look ahead parallel pursuit”, in IEEE Swedish Communication Technologies Workshop (Swe-CTW), 2011, Stockholm, Sweden.

## **2012**

### **Statistical physics and information theory based analysis**

- [SC62] M. Vehkaperä, Y. Kabashima, **S. Chatterjee**, E. Aurell, M. Skoglund and L.K. Rasmussen, “Analysis of sparse representations using Bi-orthogonal dictionaries”, in Information Theory Workshop (ITW) 2012, Switzerland.

### **Sparse systems (compressed sensing and low-rank-matrix reconstruction)**

- [SC63] S.K. Ambat, **S. Chatterjee** and K.V.S Hari, “Adaptive selection of search space in look ahead orthogonal matching pursuit”, in National Communication Conference (NCC) 2012, India.
- [SC64] **S. Chatterjee**, K.V.S Hari, P. Händel and M. Skoglund, “Projection-based atom selection in orthogonal matching pursuit for compressive sensing”, in National Communication Conference (NCC) 2012, India.
- [SC65] D. Sundman, **S. Chatterjee** and M. Skoglund, “A greedy pursuit algorithm for distributed compressed sensing”, in IEEE conf. Acoustics, Speech and Signal Proc. (ICASSP) 2012, Kyoto, Japan.
- [SC66] D. Zachariah, **S. Chatterjee** and M. Jansson, “Dynamic subspace pursuit”, in IEEE conf. Acoustics, Speech and Signal Proc. (ICASSP) 2012, Kyoto, Japan.
- [SC67] M.R. Bhavani Shankar, **S. Chatterjee** and B. Ottersten, “Detection of sparse random signals using compressive measurements”, in IEEE conf. Acoustics, Speech and Signal Proc. (ICASSP) 2012, Kyoto, Japan.
- [SC68] S.K. Ambat, **S. Chatterjee**, and K.V.S Hari, “Fusion of greedy pursuits for compressed sensing signal reconstruction”, in European Signal Processing Conference (EUSIPCO) 2012, Romania.
- [SC69] S.K. Ambat, **S. Chatterjee**, and K.V.S Hari, “Subspace pursuit embedded in orthogonal matching pursuit”, in TENCON 2012, Phillipines.
- [SC70] S.K. Ambat, **S. Chatterjee**, and K.V.S Hari, “On selection of search space dimension in compressive sampling matching pursuit”, in TENCON 2012, Phillipines.
- [SC71] D. Sundman, **S. Chatterjee** and M. Skoglund, “FROGS: A serial reversible greedy search algorithm”, in IEEE Swedish Communication Technologies Workshop (Swe-CTW), 2012, Stockholm, Sweden.
- [SC72] A. Shirazinia, **S. Chatterjee** and M. Skoglund, “Performance bounds for vector quantized compressive sensing”, in International Symp. on Info. Theory and its Applications (ISITA) 2012, Hawaii, USA.

## **2013**

### **Statistical physics and information theory based analysis**

- [SC73] M. Vehkaperä, Y. Kabashima and **S. Chatterjee**, “Statistical mechanics approach to sparse noise denoising”, in EUSIPCO 2013, Morocco (**Invited paper**).

### **Machine learning and statistical signal processing**

- [SC74] D. Zachariah, M. Jansson and **S. Chatterjee**, “Enhanced Capon beamformer using regularized covariance matching”, in IEEE Workshop on Computational Advances in Multi-Sensor Adaptive Proc. (CAMSAP) 2013, Saint Martin (**Invited paper**).

- [SC75] J.T. Flåm, E. Bjornson and **S. Chatterjee**, “Pilot design for MIMO channel estimation: an alternative approach to the Kronecker structure assumption”, in IEEE conf. Acoustics, Speech and Signal Proc. (ICASSP) 2013, Canada.

#### **Sparse systems (compressed sensing and low-rank-matrix reconstruction)**

- [SC76] D. Sundman, D. Zachariah, **S. Chatterjee** and M. Skoglund, “Distributed predictive subspace pursuit”, in IEEE conf. Acoustics, Speech and Signal Proc. (ICASSP) 2013, Canada.
- [SC77] D. Zachariah, **S. Chatterjee** and M. Jansson, “Iteratively reweighted least squares for reconstruction of low-rank matrices with linear structure”, in IEEE conf. Acoustics, Speech and Signal Proc. (ICASSP) 2013, Canada.
- [SC78] S.K. Ambat, **S. Chatterjee**, and K.V.S Hari, “Fusion of algorithms for compressed sensing”, in IEEE conf. Acoustics, Speech and Signal Proc. (ICASSP) 2013, Canada.
- [SC79] M. Sundin, M. Jansson and **S. Chatterjee**, “Conditional LMMSE for sparse signal estimation”, in EUSIPCO 2013, Morocco.
- [SC80] D. Sundman, **S. Chatterjee** and M. Skoglund, “Parallel pursuit for distributed compressed sensing”, in IEEE GlobalSIP 2013 (**Invited paper**).
- [SC81] A. Shirazinia, **S. Chatterjee** and M. Skoglund, “Analysis-by-synthesis-based quantization of compressed sensing measurements”, in IEEE conf. Acoustics, Speech and Signal Proc. (ICASSP) 2013, Canada.
- [SC82] A. Shirazinia, **S. Chatterjee** and M. Skoglund, “Channel-optimized vector quantizer for compressed sensing measurements”, in IEEE conf. Acoustics, Speech and Signal Proc. (ICASSP) 2013, Canada.

### **2014**

#### **Statistical physics and information theory based analysis**

- [SC83] M. Vehkaperä, Y. Kabashima and **S. Chatterjee**, “Analysis of regularized LS reconstruction and random matrix ensembles in compressed sensing”, in IEEE International Symposium on Information Theory (ISIT), 2014, Hawaii, USA.

#### **Speech processing (automatic speech recognition)**

- [SC84] C. Koniaris and **S. Chatterjee**, “A sparsity based preprocessing for noise robust speech recognition”, in IEEE Spoken Language Technology workshop (SLT) 2014, USA.

#### **Sparse systems (compressed sensing and low-rank-matrix reconstruction)**

- [SC85] P.B. Swamy, S.K. Ambat, **S. Chatterjee** and K.V.S Hari, “Reduced look ahead orthogonal matching pursuit”, in National Communication Conference (NCC) 2014, India.
- [SC86] K. Li, C. Rojas, **S. Chatterjee** and H. Hjalmarsson, “Piecewise Toeplitz matrices-based sensing for rank minimization”, in European Signal Processing Conference (EUSIPCO), 2014, Portugal.
- [SC87] A. Shirazinia, **S. Chatterjee** and M. Skoglund, “Distributed quantization for compressed sensing”, in IEEE conf. Acoustics, Speech and Signal Proc. (ICASSP) 2014, Italy.

#### **Machine learning and statistical signal processing**

- [SC88] M. Sundin, **S. Chatterjee** and M. Jansson, “Combined modeling of sparse and dense noise improves Bayesian RVM”, in European Signal Processing Conference (EUSIPCO), 2014, Portugal.
- [SC89] M. Sundin, **S. Chatterjee** and M. Jansson, “Relevance singular vector machine for low-rank matrix sensing”, in International Conference on Signal Processing and Communication (SPCOM) 2014, Bangalore, India (**Invited paper**).



**Submitted conference papers under peer review**

- [SC90] M. Sundin, **S. Chatterjee** and M. Jansson, “Greedy minimization of  $\ell_1$ -norm with high empirical success”, *submitted*.
- [SC91] A. Venkitaraman, **S. Chatterjee** and P. Händel, “Graph linear prediction is better than standard linear prediction”, *submitted*.
- [SC92] A. Afshan, **S. Chatterjee** and P. Ghosh, “Comparison of the phonetic information in visible and internal articulatory movements complementary to speech signal”, *submitted*.

**Conference papers under preparation (soon be ready for submission)**

- [SC93] A. Zaki, M. Sundin, **S. Chatterjee** and L.K. Rasmussen, “Channel estimation for massive MIMO using relevance singular vector machine”.