EE381K-8: Digital Signal Processing

1. Compressed sampling and applications

- An Introduction To Compressive Sampling by Candes, E.J.; Wakin, M.B.; Signal Processing Magazine, IEEE; Volume 25, Issue 2, March 2008 Page(s):21 30
- Sampling signals with finite rate of innovation by Vetterli, M.; Marziliano, P.; Blu, T.; Signal Processing, IEEE Transactions on Volume 50, Issue 6, June 2002 Page(s):1417 - 1428
- A New Method for Sparse Signal Denoising Based on Compressed Sensing by Zhu, Lei; Zhu, Yaolin; Mao, Huan; Gu, Meihua; Knowledge Acquisition and Modeling, 2009. KAM '09. Second International Symposium on Volume 1, Nov. 30 2009-Dec. 1 2009 Page(s):35 - 38

2. Frequency response masking

- Frequency-response masking approach for the synthesis of sharp linear phase digital filters by Yong Lim; Circuits and Systems, IEEE Transactions on Volume 33, Issue 4, Apr 1986 Page(s):357 364
- High-speed recursive digital filters based on the frequency-response masking approach by Johansson, H.; Wanhammar, L.; Circuits and Systems II: Analog and Digital Signal Processing, IEEE Transactions on Volume 47, Issue 1, Jan. 2000 Page(s):48 61
- IIR filters based on frequency-response masking approach by Lutovac, M.D.; Milic, L.D.; Telecommunications in Modern Satellite, Cable and Broadcasting Service, 2001. TELSIKS 2001. 5th International Conference on Volume 1, 19-21 Sept. 2001 Page(s):163 - 170

3. Prediction of Band-limited signals from past samples

- Robust prediction of band-limited signals from past samples by Brown, J.; Morean, O.; Information Theory, IEEE Transactions on, Volume 32, Issue 3, May 1986 Page(s):410 412
- On predicting a band-limited signal based on past sample values by Vaidyanathan, P.P.; Proceedings of the IEEE, Vol. 75, Issue 8, Aug. 1987 Page(s):1125 1127

4. All-Pass filters

- Digital all-pass networks by Mitra, S.; Hirano, K.; Circuits and Systems, IEEE Transactions on, Volume 21, Issue 5, Sep 1974 Page(s):688 700
- The digital all-pass filter: a versatile signal processing building block by Regalia, P.A.; Mitra, S.K.; Vaidyanathan, P.P.; Proceedings of the IEEE, Volume 76, Issue 1, Jan. 1988 Page(s):19 37

5. Multi-rate digital filters

- Interpolation and decimation of digital signalsA tutorial review by Crochiere, R.E.; Rabiner, L.R.; Proceedings of the IEEE, Volume 69, Issue 3, March 1981 Page(s):300 - 331
- Filter banks for analysis-reconstruction systems: a tutorial by Barnwell, T.P., III; Smith, M.J.T.; Circuits and Systems, 1990., IEEE International Symposium on 1-3 May 1990 Page(s):1999 - 2003 vol.3
- Multirate digital filters, filter banks, polyphase networks, and applications: a tutorial by Vaidyanathan, P.P.; Proceedings of the IEEE, Volume 78, Issue 1, Jan. 1990 Page(s):56 93

6. **DFT computation**

- Fundamental relations between the LMS algorithm and the DFT by Widrow, B.; Baudrenghien, P.; Vetterli, M.; Titchener, P.; Circuits and Systems, IEEE Transactions on Volume 34, Issue 7, Jul 1987 Page(s):814 - 820
- Split-radix algorithms for length-pm DFT's by Vetterli, M.; Duhamel, P.; Acoustics, Speech and Signal Processing, IEEE Transactions on, Volume 37, Issue 1, Jan. 1989 Page(s):57 64

7. Wavelets

- Wavelets and signal processing by Rioul, O.; Vetterli, M.; Signal Processing Magazine, IEEE Volume 8, Issue 4, Oct. 1991 Page(s):14 38
- A tutorial on modern lossy wavelet image compression: foundations of JPEG 2000 by Usevitch, B.E.; Signal Processing Magazine, IEEE, Volume 18, Issue 5, Sept. 2001 Page(s):22 35

8. Phase Shift Keying

- Quadrature-quadrature phase-shift keying by Saha, D.; Birdsall, T.G.; Communications, IEEE Transactions on, Vol. 37, Issue 5, May 1989 Page (s):437 448
- Channel coding with quadrature-quadrature phase shift-keying (Q2PSK) signals by Saha, D.; Communications, IEEE Transactions on, Vol. 38, Issue 4, April 1990 Page(s):409 417

9. Image denoising using wavelet thresholding

- Adaptive wavelet thresholding for image denoising and compression by Chang, S.G.; Bin Yu; Vetterli, M.; Image Processing, IEEE Transactions on Volume 9, Issue 9, Sept. 2000 Page(s):1532 - 1546
- Wavelet thresholding for multiple noisy image copies by Chang, S.G.; Bin Yu; Vetterli, M.; Image Processing, IEEE Transactions on Volume 9, Issue 9, Sept. 2000 Page(s):1631 - 1635

10. Speech Analysis-Synthesis

- Speech analysis/Synthesis based on a sinusoidal representation by McAulay, R.; Quatieri, T.; Acoustics, Speech and Signal Processing, IEEE Transactions on Volume 34, Issue 4, Aug 1986 Page(s):744 - 754
- Time-frequency signal models for music analysis, transformation, and synthesis by Goodwin, M.; Vetterli, M.; Time-Frequency and Time-Scale Analysis, 1996., Proceedings of the IEEE-SP International Symposium on 18-21 June 1996 Page(s):133
 - 136

11. High Compression Image Coding

- Recent results in high-compression image coding (Invited Papaer) by Kunt, M.; Benard, M.; Leonardi, R.; Circuits and Systems, IEEE Transactions on Volume 34, Issue 11, Nov 1987 Page(s):1306 - 1336
- Image compression using binary space partitioning trees by Radha, H.; Vetterli, M.; Leonardi, R.; Image Processing, IEEE Transactions on Volume 5, Issue 12, Dec. 1996 Page(s):1610 - 1624

12. Sampling theorem extensions

- Classical sampling theorems in the context of multirate and polyphase digital filter bank structures by Vaidyanathan, P.P.; Liu, V.C.; Acoustics, Speech and Signal Processing, IEEE Transactions on, Volume 36, Issue 9, Sept. 1988 Page(s):1480 -1495
- Multi-channel sampling of low-pass signals by Brown, J., Jr.; Circuits and Systems, IEEE Transactions on, Volume 28, Issue 2, Feb 1981 Page(s):101 106

13. Genomic signal processing

- D. Anastassiou, "Genomic Signal Processing," IEEE Signal Processing Magazine, vol. 18, no. 4, 2001, pp: 8-20.
- P. P. Vaidyanathan and Byung-Jun Yoon, "The role of signal-processing concepts in genomics and proteomics," Journal of the Franklin Institute, 341(1-2): 111-135.

14. Digital subscriber line (DMT) communications

- G. Cherubini, E. Eleftheriou, and S. Olcer, "Filtered multitone modulation for very high-speed digital subscriber lines," IEEE Journal on Selected Areas in Communications, vol. 20, no. 5, June 2002, pp: 1016 1028.
- G. Ginis and J. M. Cioffi, "Vectored Transmission for Digital Subscriber Line Systems," IEEE Journal on Selected Areas in Communications, vol. 20, no. 5, June 2002, pp: 1085 – 1104.