

Volume 1 Issue 2, December 2012

**International Journal of Emerging
Science and Engineering**

ISSN : 2319-6378 (Online)

Website: www.ijese.org



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Email: director@blueeyesintelligence.org, blueeyes@gmail.com

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1.	Authors:	Sumathi K, Vijayachitra S	1-5
	Paper Title:	Extended Kalman Filter Based State Estimation of Stepper Motor	
	<p>Abstract: State estimation process is one of the major concerns for controlling and monitoring systems in industry which requires high-cost measurements or involves unmeasurable variables of nonlinear systems. These drawbacks can be highly eliminated by designing systems without using any kind of sensors. In the proposed work, the state estimation technique is used for the state estimation of stepper motor. The theoretical basis of Extended Kalman Filter algorithm is explained in detail and its performance is tested with simulations. A stochastically nonlinear state estimator named Extended Kalman Filter is presented. The motor model designed for EKF application involves rotor speed, rotor position and stator currents of the stepper motor. Thus, by using this estimator the states of the stepper motor can be estimated.</p> <p>Keywords: Extended Kalman Filter, non linear system, state estimation, stepper motor</p> <p>References:</p> <ol style="list-style-type: none">1. J. Jang, S. Sul, J. Ha, K. Ide, and M. Sawamura, "Sensorless drive of surface-mounted permanent-magnet motor by high-frequency signal injection based on magnetic saliency," IEEE Trans. Ind. Appl., vol. 39, no. 4, pp. 1031–1039, Jul./Aug. 2003.2. S. Bolognani, R. Oboe, and M. Zigliotto, "Sensorless full-digital PMSM drive with EKF estimation of speed and rotor position," IEEE Trans. Ind. Electron., vol. 46, no. 1, pp. 184–191, Feb. 1999.3. D. Raca, P. Garcia, D. D. Reigosa, B. Fernando, and R. D. Lorenz, "Carrier-signal selection for sensorless control of PM synchronous machines at zero and very low speeds," IEEE Trans. Ind. Appl., vol. 46, no. 1, pp. 167–178, Jan./Feb. 2010.4. D. G. Luenberger, "An introduction to observers," IEEE Trans. Autom. Control, vol. AC-16, no. 6, pp. 596–602, Dec. 1971.5. C. Lascu, I. Boldea, and F. Blaabjerg, "Comparative study of adaptive and inherently sensorless observers for variable-speed induction motor drives," IEEE Trans. Ind. Electron., vol. 53, no. 1, pp. 57–65, Feb. 2006.6. Optimal Filtering With Kalman Filters and Smoothers—A Manual for Matlab Toolbox EKF/UKF, Dept. Biomed. Eng. Comput. Sci., Helsinki Univ. Technol., Helsinki, Finland, 2008.7. C. Harvey, Forecasting, Structural Time Series Models and the Kalman Filter. Cambridge, U.K.: Cambridge Univ. Press, 2001.8. P. Vas, Sensorless Vector and Direct Torque Control. London, U.K.: Oxford Univ. Press, 1998.		
2.	Authors:	Balvinder Kour, Randhir Singh, Parveen Lehana	6-10
	Paper Title:	Effect of SVD Based Processing on the Perception of Voiced and Unvoiced Consonants	
	<p>Abstract: Speech is a biomedical signal used by the human beings to communicate. It is generated by exciting the vocal tract from the impulses of the air coming from the lungs through the vocal cords. Sometimes, the speech generated may not be adequate for understanding or transmission. In that case, it is modified using the concepts of speech processing. In this paper the singular value decomposition (SVD) technique is used to process and the output are evaluated using informal listening tests for investigating its effect on perception. This technique may have applications in speech compression, speech enhancement, speech recognition, and speech synthesis. The speech signal in the form of vowels-consonant-vowel (VCV) was recorded for the six speakers (3 males and 3 females). These VCVs were analyzed using SVD based technique and the effect of the reduction in singular values was investigated on the perception of the resynthesized VCVs using reduced singular values. Investigations have shown that the number of singular values can be drastically reduced without significantly affecting the perception of the VCVs.</p> <p>Keywords: Speech signal, Speech generation, Speech processing, Speech compression, Singular value decomposition.</p> <p>References:</p> <ol style="list-style-type: none">1. Marwan Al-Akaidi, "Excerpt.introduction to speech processing," Fractal Speech Processing , De Montfort University, Leicester, 2004, pp 224.2. J G Proakis and D G Monolakis, "Digital signal processing," Fourth edition, pearson prentice hall, 2007.3. I R Titze , " Principles of Voice Production," Prentice Hall,1994.4. M. Dobrovolsky , " Phonetics: The Sounds of Language," Francis katamba, Heavenly labials in a world of gutturals, Wallace Stevens, pp 16 -58.5. P.Palo," A review of articulatory speech synthesis," Master's Thesis, Helsinki university of technology, Department of Electrical and Communications Engineering, Laboratory of Acoustics and Audio Signal Processing, Espoo, June 5, 2006, pp 1-126.6. S.K Gaikwad, B.A Marathwada and P Yannawar , "A review on speech recognition technique," International Journal of Computer Applications , Department of CS& IT, University Aurangabad, Vol. 10,No.3, November 2010, pp 16-24.7. L.R Rabiner "A tutorial on hidden markov models and selected applications in speech recognition," in Proc. of the IEEE,1989, Vol.77, No. 2, pp 257-286.8. M G Christenseny, Jan ostergaardz, and S H Jensenz, "On compressed sensing and its application to speech and audio signals," Dept. of Media Technology, Aalborg University, Denmark.9. Elaydi H, Jaber M I, Tanbours M B "Speech compression using wavelets," Electrical & Computer Engineering Department, Islamic University of Gaza, Palestine.10. F. Khakpoor and G. Ardeshtir, "Using PCA and SVD to improve wavelet-based method for detection of voice and silence in speech," European Journal of Scientific Research , Faculty of Electrical & Computer Engineering, Babol Noushirvani University of Technology ,Babol, Iran , Vol.37 , No.4, 2009, pp 641-648.11. T McCormick, B Langford and P Pikkert etal , "Phonetics made easy a manual of language acquisition for cross cultural effectiveness compiled and adapted by various individuals," Summer Institute of Linguistics, LACE Version ,pp 2-46.12. K Hermus, I Dologlou, PP Wambacq and D V Compennollet , "Fully adaptive svd-based noise removal for robust speech recognition," Katholieke Universiteit Leuven, Belgium .13. Bethany Adams and Nina Manual, " Using the Singular Value Decomposition Particularly for the Compression of Color Images," November 13, 2005.		

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3.	Authors:	F.Vijay Amirtha Raj
	Paper Title:	Automatic Battery Charging Algorithms for Hybrid Electric Vehicles
	<p>Abstract: Battery-charging algorithms can be used for either single or multiple-battery chemistries. Single-chemistry chargers have some advantages than multi chemistry chargers because of its simplicity and reliability. On the other hand, multi chemistry chargers, or "universal battery chargers," provide a practical option for multi chemistry battery systems, particularly for portable appliances, but they have some limitations. This paper proposes the design of a single chemistry intelligent battery charger that can be used for major batteries, i.e. Nickel-Metal-Hydrde and Lithium-Ion batteries for use in Hybrid Electric Vehicles (HEV). The design is implemented using MATLAB Simulation Tool which monitors the battery status and parameters and controls the charging operation. This ensures complete, fast, and safe charging of the battery pack.</p> <p>Keywords: Constant current (CC), constant voltage (CV), inflection point, open-circuit voltage (OCV), pulse charging, state of charge (SOC), trickle charging, voltage drop.</p> <p>References:</p> <ol style="list-style-type: none"> Battery University Website. [Online]. Available: http://www.batteryuniversity.com Battery and Energy Technologies Website.[Online]. Available: http://www.mpoweruk.com R. C. Cope and Y. Podrazhansky, "The art of battery charging," in Proc.14th Battery Conf. Appl. Adv., 1999, pp. 233–235. Panasonic Lithium-Ion Charging Datasheet, Jan. 2007. [Online]. Available: http://www.panasonic.com/industrial/includes/pdf/ Panasonic_Lilon_Charging.pdf D. Simon, Optimal State Estimation, 1st ed. Hoboken, NJ: Wiley, 2006, pp. 407–409. Ala Al-Haj Hussein, Student Member, IEEE, and IssaBatarseh, Fellow," A Review of Charging Algorithms for Nickel and Lithium Battery Chargers", IEEE IEEE TRANSACTIONS ON VEHICULAR TECHNOLOGY, VOL. 60, NO. 3, MARCH 2011 J. Diacut;az, J. Martiacut;n-Ramos, A. Perniacut;a, F. Nuño, and F. Linera, "Intelligent and universal fast charger for NiCd and NiMH batteries in portable applications," IEEE Trans. Ind. Electron., vol. 51, no. 4, pp. 857–863, Aug. 2004. S. Moore and P. Schneider, "A review of cell equalization methods for lithium-ion and lithium-polymer battery systems," presented at the Soc. Automotive Eng. World Congr., Detroit, MI, Mar. 2001. [Online]. Available:http://www.americansolarchallenge.org/tech/resources/SAE_2001-01-0959.pdf "A Study on Battery Management System ofNi-MU Battery Packs for Hybrid ElectricVehicle Applications", NiuLiyong, Jiang Jiuchun, and Zhang XinFirst International :Power and Energy CoferencePECon 2006November 28-29, 2006, Putrajaya, Malaysia "Battery Management for Hybrid Electric Vehicle and Telecommunication Applications" ,Boris Tsenter:Total Battery Management, Inc., 5115 New Peachtree Rd, Ste 200 M. Gonzdez, F. Ferrero, J. Antbn, and M. Pkez, "Considerations to im-prove the practical design of universal and full-effective NiCd/NiMH battery fast chargers," in Proc. APEC Conf., 1999, pp. 167–173. M. Elias, K. Nor, and A. Arof, "Design of smart charger for series forlithium-ion batteries," in Proc. PEDS Conf., 2005, pp. 1485–1490. 	
4.	Authors:	Sudha.V, Jayashree.P
	Paper Title:	Lung Nodule Detection in CT Images Using Thresholding and Morphological Operations
	<p>Abstract: Lung cancer which is among the five main types of cancer is a leading one to overall cancer mortality contributing about 1.3 million deaths/year globally. Lung cancer is a disease and it is characterized by uncontrolled cell growth in tissues of the lung. Lung nodule is an abnormality that leads to lung cancer, characterized by a small round or oval shaped growth on the lung which appears as a white shadow in the CT scan. An effective computer aided lung nodule detection system can assist radiologists in detecting lung abnormalities at an early stage. If defective nodules are detected at an early stage, the survival rate can be increased up to 50%. This paper aims to develop an efficient lung nodule detection system by performing nodule segmentation through thresholding and morphological operations. The proposed method has two stages: lung region segmentation through thresholding and then segmenting the lung nodules through thresholding and morphological operations.</p> <p>Keywords: Computed Tomography, Morphological Operations, Segmentation, Thresholding.</p> <p>References:</p> <ol style="list-style-type: none"> S.G.Armato, M.L.Giger, C.J.Moran, J.T.Blackburn, K.Doi, H.MacMahon (1999) 'Computerized detection of pulmonary nodules on CT scans', Radiographics 19 1303-1311. S.G.Armato, G.McLennan, M.F. McNitt-Gray, C.R.Meyer, D.Yankelevitz, D.R.Aberle, C.I.Henschke, E.A.Hoffman, E.A.Kazerooni, H.MacMahon, A.P.Reeves, B.Y.Croft, L.P.Clarke (2004) L.I.D.C.R. Group, Lung image database consortium: developing a resource for the medical imaging research community, Radiology 232, 739-748. Eva M. van Rikxoort, Mathias Prokop, Bartjan de Hoop, Max A. Viergever, Josien P. W. Pluim, and Bram van Ginneken (2010) 'Automatic Segmentation of Pulmonary Lobes Robust Against Incomplete Fissures', IEEE transactions on medical imaging, vol. 29, no. 6. Jan-Martin Kuhnigk, Volker Dicken, Lars Bornemann, Annemarie Bakai, Dag Wormanns, Stefan Krass, and Heinz-Otto Peitgen (2006) 'Morphological Segmentation and Partial Volume Analysis for Volumetry of Solid Pulmonary Lesions in Thoracic CT Scans', IEEE transactions on medical imaging, vol. 25, no. 4. Jamshid Dehmeshki, Hamdan Amin, Manlio Valdivieso, and Xujiong Ye (2008) 'Segmentation of Pulmonary Nodules in Thoracic CT Scans: A Region Growing Approach', IEEE transactions on medical imaging, vol. 27, no. 4, 467 	

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