

# Curriculum Vitae

**Name:** Soo-Young Lee  
**Date of Birth:** October 15th, 1952

## Current Position:

Professor, School of Electrical Engineering,  
Director, Brain Science Research Center,  
Director, Joint R&D Center for Brain Science and Technology Applications,  
Co-Director, Center for Artificial Intelligence Research,  
All at Korea Advanced Institute of Science and Technology

## Education:

BS, Electronics Engineering, Seoul National University, 1975  
MS, Electrical Engineering, Korea Advanced Institute of Science, 1977  
Ph.D., Electrophysics, Polytechnic Institute of New York (later merged to NYU), 1984

## Experience:

2016-2016: International Advisory Panel, University Technology Brunei, Brunei  
2016-2016: *Co-Chair, Artificial Intelligence Applications and Industrialization Committee, Ministry of Trade, Industry and Energy (MOTIE), Korea*  
2010-2017: *Governing Board member, International Neuroinformatics Coordinating Facility (INCF), Stockholm, Sweden (Due to the organizational change of INCF in 2016, now serving as a Member of Council for Training, Science, and Infrastructure)*  
2008-2009: Researcher, RIKEN Brain Science Institute, Japan  
2002-2004: *Founding Chair, Department of BioSystems (now Department of Bio and Brain Engineering), KAIST*  
1998-2008: ***Principal Investigator, Korean Brain Science/Neuroinformatics Research Program***  
1997-1998: Visiting Faculty, University of Colorado at Boulder, USA  
1993-1993: Humboldt Research Fellow, University of Erlangen, Germany  
1983-1985: Staff/Senior Scientist, General Physics Corporation, USA  
1980-1983: Research Fellow, Microwave Research Institute, Polytechnic Inst. of NY, USA  
1977-1980: Project Engineer, Taihan Engineering Company, Korea

## Research Topics:

*Combining brain/cognitive science and information technology (electrical engineering and computer science) to develop deep learning algorithms and Artificial Intelligence applications for better human life in aging society*

## Activities in Academic Societies:

***President, Asian-Pacific Neural Network Society (2017)***  
***Governing Board Member, International Neural Network Society (2011-2013)***  
*President, Asian-Pacific Neural Network Assembly (2000-2001)*  
Awards Committee Chair, Asia-Pacific Neural Network Assembly (2005-2007; 2014-2016)  
Governing Board Member, Asia-Pacific Neural Network Assembly (1994-2000)  
***President, Korean Brain Society (2002-2003)***  
***President, Brain Engineering Society of Korea (2012-2014)***  
Member, National Academy of Engineering in Korea (2006-Present)  
Many Keynote, Plenary, and Invited talks at International Conferences on artificial neural networks and intelligent machines.

## **Awards:**

- Winner of EmotiW 2016, Emotion Recognition in the World Challenge**, ACM International Conference on Multimedia Interactions, November 2015, Seattle, USA.
- ICA Unsupervised Learning Pioneer Award, SPIE Defense, Security + Sensing, April 2010, Orlando, USA.
- Outstanding Achievement Award, Asia-Pacific Neural Network Assembly**, Dec. 5, 2009
- Biomedical Wellness Award, SPIE Defense+Security, March 18, 2008, Orlando, USA.
- Excellent Service Award, Asia-Pacific Neural Network Assembly (APNNA), 2004
- President Award, Asia-Pacific Neural Networks Assembly (APNNA), 2002.
- Contribution Award, Korea Advanced Institute of Science and Technology (KAIST) 2002.
- President Award, International Neural Network Society (INNS)**, 2001.
- Neural Network Leadership Award, International Neural Network Society (INNS)**, 1994.
- Meritorious Award (2000), International Cooperation Award (2011), and International Cooperation Main Award (2015), Korea Advanced Institute of Science and Technology
- Several Best Paper and Best Poster Awards at International Conferences on artificial neural networks and intelligent machines.

## **Activities for International Academic Meetings:**

- Conference Co-Chair, The 11th Multi-disciplinary International Workshop on Artificial Intelligence (MIWAI 2017), Nov. 20-22, 2017, Brunei
- International Advisory Committee, International Conference on Neural Information Processing (ICONIP2017), Nov. 14-18, 2017, Guangzhou, China
- International Advisory Committee, Computational Intelligence in Information Systems (CIIS2016), Nov. 18-20, 2016, Brunei
- International Advisory Committee, International Conference on Neural Information Processing (ICONIP2016), Oct. 16-21, 2016, Kyoto, Japan
- Honorary Co-Chair, International Conference on Human-Agent Interaction (HAI2015), Oct. 21-24, 2015, Daegu, Korea
- Honorary Co-Chair, International Conference on Neural Information Processing (ICONIP2013), Nov. 4-7, 2013, Daegu, Korea
- Organizer, China-Japan-Korea Joint Workshop on Neurobiology and Neuroinformatics (NBNI), December 18-20, 2016, Hong Kong; December 20-22, 2015, Pusan, Korea; December 18-20, 2014, Okazaki, Japan; Nov. 18-19, 2013, Beijing, China; Nov. 22-23, 2012, Seoul, Korea; Dec. 18-19, 2011, Okinawa, Japan; Oct. 11-12, 2010, Kunming, China; July 5-7, 2007, Jeju City, Korea.
- Advisory Committee, International Conf. on Neural Information Processing, Nov. 14-18, 2011, Shanghai, China.
- Program Co-Chair, International Conf. on Cognitive Neurodynamics, June 9-13, 2011, Hokkaido, Japan.
- Program Co-Chair, International Conference on Cognitive Neurodynamics (ICCN09), November 15-19, 2009, Hangzhou, China
- Organizer, AOARD Workshop on Digital Natives, Nov. 4-6, 2009, Daejeon, Korea
- Organizer, East-Asia University Workshop on Neuroinformatics, Kita-Kyushu, Japan, March 9-10, 2009.
- Conference Co-Chair, International Conference on Intelligent Data Engineering and Automated Learning (IDEAL2008), November 2-5, 2008, Daejeon, Korea
- Program Co-Chair, International Conference on Cognitive Neurodynamics (ICCN07) and Shanghai International Conference Physiological Biophysics - Cognitive Neurodynamics (SICPB07) November 17-21, 2007, Shanghai, China

- Conference Chair, 2007 IEEE International Conference on Information Acquisition (ICIA2007), July 9-11, 2007, Jeju City, Korea
- Organizer, International Symposium on BioSystems, Oct. 13, 2006, Daejeon, Korea
- Co-Chair, International Symposium on Artificial Brain with Emotion and Learning, August 24-25, 2006, Seoul, Korea
- Program Co-Chair, IEEE International Conference on Information Acquisition, Aug. 20-23, 2006, Weihai, China
- Organizer, AEARU International Workshop on BioSystems, August 19-21, 2004, Daejeon, Korea
- Vice Chair, International Conference on Speech Science, May 21-22, 2004, Seoul, Korea
- Conference Co-Chair, International Conference on Neural Information Processing, November 2000, Daejeon, Korea
- Program Co-Chair, International Conference on Neural Information Processing, November 1994, Seoul, Korea
- Coordinator, KOSEF-CNR Joint Seminar on Information Science and Technology, October, 1993. Daejeon, Korea.
- Coordinator, Korean-Italian Joint Workshop on Microelectronics, May 1991, Daejeon, Korea
- Coordinator, Korea-USA Joint Workshop on Optical Neural Networks, April 1990, Seoul, Korea
- Workshop Co-Chair, Publicity Co-Chair, Program Committee Member, Panel Member, and Invited Session Organizer for more than 30 international conferences and workshops

**Keynote/Plenary/Invited Talks at International Conferences (2004-present):**

- Invited Talk, “Deep Learning for Emotional IQ”, 2017 Gulf of Mexico Spring School (GMSS): Deep Learning ANN and Applications Workshop, Tallahassee, USA, April 15-17, 2017.
- Invited Talk, “Hierarchical Committee and Top-Down Attention for Robust Classification: Cases for Emotional Facial Expression and Noisy Speech Recognition”, 16th Japan-China-Korea Joint Workshop on Neurobiology and Neuroinformatics (NBNI2016), The Hong Kong University of Science & Technology, Hong Kong, China, December 18-20, 2016
- Keynote Talk, “Artificial Intelligent Systems with Human Internal State Understanding: I Know Who You Are and What You Think”, Computational Intelligence in Information Systems 2016 (CIIS2016), Bandar Seri Begawan, Brunei, November 18-20, 2016.
- Invited Talk, Brunei-Korea ICT Conference, Oct. 7-10, 2016, Brunei.
- Invited Talk, “Investigating Neural Correlates of Human Trust in Machine Using a Theory-of-Mind Game”, 4th International Workshop on Advances in Neuroinformatics (AINI2016), Wako, Japan, May 28-29, 2016
- Keynote Talk, “Understanding Human Internal States: I Know Who You Are and What You Think“, 3rd International Conference on Human-Agent Interaction (HAI2015), Daegu, Korea, 21-24, October, 2015.
- Invited Talk, “I Know Who You Are and What You Think: An EEG Study”, 10th AEARU Workshop on Computer Science and Web Technology (AEARU-CSWT2015), University of Tsukuba, Japan, 25-27, February, 2015.
- Invited Talk, “I Know Who You Are: EEG-based User Identification”, 14th Japan-China-Korea Joint Workshop on Neurobiology and Neuroinformatics (NBNI 2014), Okazaki, Japan, 18-20 December, 2014.
- Invited Talk, “Brain Fingerprints for User Authentication Systems with Absolute Safety”, 4th INNS Symposia Series on Computational Intelligence in Information Systems (INNS-CIIS 2014), Bandar Seri Begawan, Brunei, 7-9 November, 2014.

- Invited Talk, “I Know What You Think: Understanding Human Internal States for Artificial Cognitive Systems”, The 21st International Conference on Neural Information Processing (ICONIP2014), Kuching, Malaysia, 3-6 November, 2014.
- Invited Talk, “User Authentication Systems Based on Brain Finger-prints”, SPIE Sensing Technology + Applications 2014, Baltimore, USA, 5-9 May, 2014.
- Invited Talk, “Understanding Human Internal States from Brain Imaging and Behavioral Data”, Asia-Pacific Conference on Computational Behavioral Sciences 2014, Seoul, Korea, October 12-15, 2014
- Invited Talk, “User Authentication and Sympathy Identification with EEG”, 13th China-Japan-Korea Joint Workshop on Neurobiology and Neuroinformatics, Beijing, China, Nov. 18-19, 2013.
- Plenary Talk, “Artificial Cognitive Systems with Active Learning and Situation Awareness Abilities: From Cognitive Science to Real-World Applications”, International Conference on neural Information Processing, Nov. 4-7, 2013, Daegu, Korea
- Invited Talk, “Multi-frequency Resolution Method for Distortion-free Signal Extraction from Convolutional Mixtures”, SPIE Defense Security + Sensing 2013, Conference on Independent Component Analyses, Compressive Sampling, Wavelets, Neural Net, Biosystems, and Nanoengineering XI, Baltimore, USA, April 29-May 3, 2013.
- Plenary Talk, “Active Learning by Selecting New Training Samples from Unlabeled Data”, Annual International Conference on Biologically Inspired Cognitive Architectures (BICA2012), Palermo, Italy, October 21-November 3, 2012
- Keynote Talk, “Active Learning and Implicit Intention Understanding: Two New Functions for Artificial Cognitive Systems”, 22nd Italian Workshop on Neural Networks (WIRN2012), Salerno, Italy, May17-19, 2012`
- Plenary Talk, International Conf. on Neural Information Processing, Nov. 14-18, 2011, Shanghai, China.
- Plenary Talk, International Conf. on Cognitive NeuroDynamics, June 9-13, 2011, Hokkaido, Japan.
- Invited Talk, “Perspectives on Neuroinformatics as an Important Tool for an Engineering Goal - Artificial Cognitive System”, INCF Neuroinformatics / Neuro2010, Kobe, Japan, August 30-September 4, 2010.
- Invited Talk, International Conf. on Neural Information Processing, Dec. 1-5, 2009, Bangkok, Thailand.
- Invited Talk, SPIE Defense+Security: Independent Component Analysis, Wavelets, Neural Network, Biosystems and Nanoengineering, April 13-17, 2009, Orlando, US.
- Keynote Talk, IEEE International Conference on Neural Networks & Signal Processing (ICNNSP08), June 8-10, 2008, Zhenjiang, China
- Invited Talk, SPIE Defense+Security: Neural Networks and Blind Signal Separation, March 15-18, 2008, Orlando, USA.
- Invited Talk, World Science Forum - Brain, April 28, 2008, Seoul, Korea.
- Keynote Talk, 8th International Conference on Intelligent Data Engineering and Automated Learning (IDEAL'07), December 16-19, 2007, Birmingham, UK
- Keynote Talk, International Conference on Cognitive Neurodynamics (ICCN07) and Shanghai International Conference Physiological Biophysics - Cognitive Neurodynamics (SICPB07) November 17-21, 2007, Shanghai, China
- Keynote Talk, 3rd International Conference on Natural Computation (ICNC'07) and the 4rd International Conference on Fuzzy Systems and Knowledge Discovery (FSKD'07), Aug. 24-27, 2007, Haikou, China
- Plenary Talk, IEEE International Conference on Integration Technology (ICIT2007), March 21-23, 2007, Shenzhen, China

- Invited Talk, INE Telluride Neuromorphic Engineering Workshop, June 25-July 15, 2006, Telluride, USA
- Invited Talk, International Conference on Neural Information Processing, Oct. 3-6, 2006, Hong Kong
- Plenary Talk, 2nd Shanghai International Congress on Physiological Biophysics - Audition & Vision (Shanghai NSA06), Nov. 3-7, 2006, Shanghai, China
- Plenary Talk, IEEE International Conference on Neural Networks and Brain, Oct. 13-15, 2005, Beijing, China
- Invited Talk, 3rd Korea-U.S.A. Joint Seminar on MEMS and BioSystems Technology, June 10, 2005, Seoul, Korea
- Plenary Talk, International Workshop on VLSI Design and Video Technology (IWVDVT2005), May 28-31, 2005, Suzhou, China
- Plenary Talk, International Conference on Information Acquisition, June 20-23, 2004, Hefei, China
- Invited Talk, Seventh International Conference on Artificial Intelligence and Soft Computing, June 7-11, 2004, Zakopane, Poland
- Plenary Talk, International Conference on Neural Networks and Signal Processing, December 16-19, 2003, Nanjing, China
- Invited Talk, Korea-USA Joint Workshop on MEMS and BioSystems, March 12-12, 2004, Berkeley, USA
- Invited talks to many academic and research institutes around the world

#### **Tutorials/Lectures:**

- Deep Learning for Speech, Language Processing, and Emotion Recognition, 11th Multi-disciplinary International Workshop on Artificial Intelligence (MIWAI 2017), Nov. 20-22, 2017, Brunei (<https://khamreang.msu.ac.th/miwai17/programme.html>)
- Multi-modal Deep Learning for the Recognition of Human Emotions in the Wild, International Summer School on Deep Learning, July 16-21, 2017, Bilbao, Spain (<http://grammars.grlmc.com/DeepLearn2017/>)
- Deep Learning and Computational Models of Human Audio-Visual Pathways, International Conference on Intelligent Computing (ICIC2016), Lanzhou, China, August 2-5, 2016
- Supervised Feature Selection and Adaptation for Efficient Classification, The 9th International Conference on Intelligent Data Engineering and Automated Learning, Daejeon, Korea, November 2-5, 2008.

#### **Media Coverage:**

- Emotion Recognition from Facial Expression, 9 PM News, KBS TV (Korean National Broadcasting), April 3<sup>rd</sup>, 2017.
- What job will be rising?, Boyhood JoongAng Weekly, March 23, 2015.
- Brain-Inspired Auditory Processor and the Artificial Brain Project, Neuromorphic Engineer, Vol.3, No.2, March 2007, The Institute of Neuromorphic Engineering (<http://www.ine-web.org>)
- Artificial Brain: Brain-Inspired Intelligent Systems, Tri-Society Newsletter, Vol.5, No.2, 2007, International NNS-European NNS-Japanese NNS ([www.inns.org](http://www.inns.org))
- Artificial Brain and *OfficeMate*, Tri-Society Newsletter, Vol.7, No.1, 2009, International NNS-European NNS-Japanese NNS ([www.inns.org](http://www.inns.org))
- Science in Asia, Swiss National TV, 2008.
- Many other articles in Korean national newspapers and TV broadcasting

**Other Services:**

- Member, Fusion and Multidisciplinary Technology Professional Committee, National Science and Technology Committee, Blue House, 2008-2011
- Member, Adhoc Committee for New Growth Engine Technology, MEST, 2008
- Korean Representative, OECD Global Science Forum for Neuroinformatics, 2002-2004.
- Project Manager, Feasibility Study and Planning for Korean Brain Research Program, 1997.
- Member, Planning Committee for Korean Major National Projects, 1998.

# Publication List

## 1. International Journals

- [130] Hwaran Lee, Geonmin Kim, Ho-Gyeong Kim, Sang-Hoon Oh, **Soo-Young Lee**, "Deep CNNs Along the Time Axis with Intermap Pooling for Robustness to Spectral Variations", IEEE Signal Processing Letters, Volume: 23 Issue: 10, 1310 – 1314, 12 July 2016
- [129] Bo-Kyeong Kim, Jihyeon Roh, Suh-Yeon Dong, **Soo-Young Lee**, "Hierarchical committee of deep convolutional neural networks for robust facial expression recognition," Journal on Multimodal User Interfaces, June 2016, Volume 10, Issue 2, pp 173–189.
- [128] Hyung-Bae Jeon and **Soo-Young Lee**, "Language Model Adaptation Based on Topic Probability of Latent Dirichlet Allocation," ETRI Journal, vol. 38, no. 3, June. 2016, pp. 487-493.
- [127] Suh-Yeon Dong, Bo-Kyeong Kim & **Soo-Young Lee**, "Implicit agreeing/disagreeing intention while reading self-relevant sentences: A human fMRI study", Social Neuroscience, 2016, Vol. 11, No. 3, 221–232.
- [126] Suh-Yeon Dong, Bo-Kyeong Kim, **Soo-Young Lee**, "EEG-Based Classification of Implicit Intention During Self-Relevant Sentence Reading", IEEE Transactions on Cybernetics, Vol. 46, No. 11, 2016, pp. 2535-2542.
- [125] Hyun Ah Song, Bo-Kyeong Kim, Thanh Luong Xuan, **Soo-Young Lee**, "Hierarchical feature extraction by multi-layer non-negative matrix factorization network for classification task", Neurocomputing, Volume 165, 1 October 2015, Pages 63–74
- [124] Wonil Chang, Hyun Ah Song, Sang-Hoon Oh, **Soo-Young Lee**, "Noise-Robust Detection of Symmetric Axes by Self-Correcting Artificial Neural Network", Neural Processing Letters, April 2015, Volume 41, Issue 2, pp 179–189
- [123] Changhyun Kim, Wonil Chang, Sang-Hoon Oh, **Soo-Young Lee**, "Joint Estimation of Multiple Notes and Inharmonicity Coefficient Based on f0-Triplet for Automatic Piano Transcription," IEEE Signal Processing Letters, Volume: 21 Issue: 12, 1536 – 1540, Dec. 2014
- [122] Wonil Chang, Keeseong Cho, Won Ryu, **Soo-Young Lee**, "Error cost function for mirror-based three-dimensional reconstruction", Electronics Letters (Jul 31, 2014), 1134-1135.
- [121] Hwaran Lee, Iqbal, N., Wonil Chang, and **Soo-Young Lee**, "A Calibration Method for Eye-Gaze Estimation Systems Based on 3D Geometrical Optics", IEEE Sensors Journal, Vol.13, Issue 9, pp. 3219–3225, 2013.
- [120] Yong-Sun Choi, **Soo-Young Lee**, "Nonlinear spectro-temporal features based on a cochlear model for automatic speech recognition in a noisy situation", Neural Networks, Vol. 45, pp. 62-69, 2013.
- [119] Wonil Chang, **Soo-Young Lee**, "Description of Shape Patterns Using Circular Arcs for Object Detection", IET Computer Vision, Vol.7, Issue 2, pp. 90–104, 2013.01.03
- [118] Nadeem Iqbal, **Soo-Young Lee**, "Smart User Interface for Mobile Consumer Devices Using Model-Based Eye-Gaze Estimation", IEEE Transactions on Consumer Electronics, Vol. 59, Issue 1, pp. 161-166, 2013. 02
- [117] **Soo-Young Lee**, Hyun-Ah Song and Shun-ichi Amari, "A New Discriminant NMF Algorithm and Its Application to the Extraction of Subtle Emotional Differences in Speech", Cognitive Neurodynamics, Vol. 6, Issue 6, pp. 525-535, 2012. 12.
- [116] Azam Rabiee, Saeed Setayeshi, and **Soo-Young Lee**, "A Harmonic-based Biologically Inspired Approach to Monaural Speech Separation", IEEE Signal Processing Letters, Vol. 19, No. 9, pp. 559-562, 2012. 09.
- [115] Kyu-Woong Hwang, **Soo-Young Lee**, "Environmental Audio Scene and Activity Recognition through Mobile-based Crowdsourcing", IEEE Transactions on Consumer Electronics, Vol. 58, No. 2, pp. 700-705, 2012. 05.
- [114] Sung-Do Choi, **Soo-Young Lee**, "3D Stroke Reconstruction and Cursive Script Recognition with Magnetometer-aided Inertial Measurement Unit", IEEE Transactions on Consumer Electronics, Vol. 58, No. 2, pp. 661-669, 2012. 05.
- [113] Azam Rabiee, Saeed Setayeshi, and **Soo-Young Lee**, "CASA: Biologically Inspired Approaches for Auditory Scene Analysis", Natural Intelligence: the INNS Magazine, Vol. 1, Issue 2, pp. 50-58, 2012. 02.

- [112] Jung-hui Im and **Soo-Young Lee**, "Unified Training of Feature Extractor and HMM Classifier for Speech Recognition", IEEE Signal Processing Letters, Vol. 19, Issue 2, pp. 111-114, 2012. 02
- [111] Chandra S. Dhir, Jaehyung Lee, and **Soo-Young Lee**, "Extraction of Independent Discriminant Features for Data with Asymmetric Distribution", Knowledge and Information Systems, Vol. 30, No. 2, pp. 359-375, 2012. 02.
- [110] Choong Hwan Choi, Wonil Chang, and **Soo-Young Lee**, "Blind Source Separation of Speech and Music Signals using Harmonic Frequency Dependent Independent Vector Analysis", Electronics Letters, Vol. 48, No. 2, pp. 124-125, 2012. 01. 19
- [109] Do-Kwan Oh; Sang-Hoon Oh; **Soo-Young Lee**, "Learning One-to-Many Mapping With Locally Linear Maps Based on Manifold Structure," IEEE Signal Processing Letters, Vol. 18 , No. 9, pp. 521 – 524, 2011
- [108] Chandra S. Dhir and **Soo-Young Lee**, "Discriminant Independent Component Analysis," IEEE Trans. Neural Networks, Vol.22, No.6, pp. 845–857, 2011.06.
- [107] Jae-Kwon Yoo, Choong Hwan Choi, and **Soo-Young Lee**, "Extracting a Source of Shorter Source-to-microphone Distance from Convolutive Mixtures", Electronics Letters, Vol. 47, No. 2, pp. 74-76, 2011. 01.20
- [106] J. Lee, **S. Y. Lee**, "Learning the Dynamical System Behind Sensory Data", Neural Computation, Vol. 22, No. 6, pp. 1615-1645, 2010. 06.
- [105] H. M. Park, S. H. Oh, **S. Y. Lee**, "A Bark-Scale Filter Bank Approach to Independent Component Analysis for Acoustic Mixtures", Neurocomputing, Vol. 73, Issues 1-3, pp. 304-314, 2009. 12.
- [104] Jong-Hwan Lee, Sang-Hoon Oh, **Soo-Young Lee**, "Binaural Semi-blind Dereverberation of Noisy Convolved Speech Signals", Neurocomputing, Vol. 72, Issues 1-3, pp. 636-642, 2008. 12.
- [103] Young-Gul Won, **Soo-Young Lee**, "Convolutive Blind Signal Separation by Estimating Mixing Channels in Time Domain", Electronics Letters, Vol. 44, No. 21, pp.1277-1278, 2008. 10. 09
- [102] Jaehyung Lee and **Soo-Young Lee**, "Robust Fundamental Frequency Estimation Combining Contrast Enhancement and Feature Unbiasing", IEEE Signal Processing Letters, Vol. 15, pp. 521-524, 2008. 07.
- [101] Inkyung Jung, Jaehyung Lee, **Soo-Young Lee**, Dongsup Kim, "Application of Nonnegative Matrix Factorization to Improve Profile-Profile Alignment Features for Fold Recognition and Remote Homolog Detection", BMC Bioinformatics, 9:298, 2008. 07.
- [100] Yong-Sun Choi, **Soo-Young Lee**, Kourosh Parham, Stephen T. Neely, and Duck O. Kim, "Stimulus-frequency Otoacoustic Emission: Measurements in Humans and Simulations with an Active Cochlear Model", Journal of Acoustical Society of America, Vol. 123, No. 5, pp 2651-2669, 2008. 05.
- [99] Chandra Shekhar Dhir, Hyung-Min Park, and **Soo-Young Lee**, "Directionally Constrained Filterbank ICA", IEEE Signal Processing Letters, Vol. 14, Issue 8, pp. 541-544, 2007. 08.
- [98] Chang-Hoon Lee and **Soo-Young Lee**, "Noise-Robust Speech Recognition Using Top-Down Selective Attention with an HMM Classifier", IEEE Signal Processing Letters, Vol. 14, Issue 7, pp. 489-491, 2007. 07.
- [97] Taesu Kim, Hagai Attias, **Soo-Young Lee**, and Te-Won Lee, "Blind Source Separation Exploiting Higher-order Frequency Dependencies", IEEE Transactions on Audio, Speech and Language Processing, Vol. 15, No. 1, pp. 70-79, 2007. 01.
- [96] Hyung-Min Park, Sang-Hoon Oh and **Soo-Young Lee**, "A Modified Infomax Algorithm for Blind Signal Separation", Neurocomputing, Vol. 70, Issues 1-3, pp. 229-240, 2006. 12.
- [95] P. C. Barman, Nadeem Iqbal and **Soo-Young Lee**, "Non-negative Matrix Factorization based Text Mining: Feature Extraction and Classification", Lecture Notes in Computer Science, Vol. 4233, pp.703-712, 2006. 10.
- [94] Chandra Shekhar Dhir, Hyung-Min Park, and **Soo-Young Lee**, "Performance Evaluation of Directionally Constrained Filterbank ICA on Blind Source Separation of Noisy Observations", Lecture Notes in Computer Science, Vol. 4232, pp. 1133-1142, 2006. 10.
- [93] Hyung-Min Park, Jong-Hwan Lee, Sang-Hoon Oh, and **Soo-Young Lee**, "Blind Deconvolution with Sparse Priors on the Deconvolution Filters", Lecture Notes in Computer Science, Vol. 3899, pp. 658-665, 2006. 10.
- [92] Hyung-Min Park, Chandra S. Dhir, Sang-Hoon Oh, and **Soo-Young Lee**, "A Filter Bank Approach to Independent Component Analysis for Convolved Mixtures", Neurocomputing, Vol. 69, Issues 16-18, pp. 2065-2077, 2006. 10.



- [91] M.J. Lee, K.D. Lee, and **S.Y. Lee**, "Unsupervised Feature Extraction for the Representation and Recognition of Lip Motion Video", *Lecture Notes in Computer Science*, Vol. 4115, pp. 741-746, 2006. 09.
- [90] M.J. Lee and **S.Y. Lee**, "Unsupervised Extraction of Multi-Frame Features for Lip-Reading", *Neural Information Processing-Letters and Reviews*, Vol. 10, No. 4-6, pp. 97-104, 2006. 06.
- [89] Taesu Kim and **Soo-Young Lee**, "Learning Self-organized Topology-preserving Complex Speech Features at Primary Auditory Cortex", *Neurocomputing*, Vol. 65-66, pp. 793-800, 2005. 06.
- [88] Seungjin Choi, Andrzej Cichocki, Hyung-Min Park, and **Soo-Young Lee**, "Blind Source Separation and Independent Component Analysis: A Review", *Neural Information Processing-Letters and Reviews*, Vol. 6, No. 1, pp. 1-57, 2005. 01.
- [87] Hyung-Min Park, Jong-Hwan Lee, Taesu Kim, Un-Min Bae, Byung Taek Kim, Ki-Young Park, Chang-Min Kim and **Soo-Young Lee**, "Modeling Auditory Pathway for Intelligent Information Acquisition", *International Journal of Information Acquisition*, Vol. 1, No. 4, pp. 345-356, 2004. 12.
- [86] C.S. Dhir, H.M. Park and **S.Y. Lee**, "Permutation Correction of Filter Bank ICA using Static Channel Characteristics", *Lecture Notes in Computer Science*, Vol. 3316, pp. 1076-1081, 2004. 11.
- [85] Jong-Hwan Lee, Sang-Hoon Oh, and **Soo-Young Lee**, "Blind Dereverberation of Single-channel Speech Signals using an ICA-based Generative Model", *Lecture Notes in Computer Science*, Vol. 3316, pp. 1070-1075, 2004. 11.
- [84] **S.Y. Lee**, "Korean Neuroinformatics Research Program: From the Second Phase to the Third Phase", *Lecture Notes in Computer Science*, Vol. 3316, pp. 885-890, 2004. 11.
- [83] Hyung-Min Park, Sang-Hoon Oh, and **Soo-Young Lee**, "Blind Equalization using Direct Channel Estimation", *Lecture Notes in Computer Science*, Vol. 3195, pp. 562-569, 2004. 10.
- [82] KiSeok Cho and **Soo-Young Lee**, "Offset-Tolerant Design of Analog Chips for Independent Component Analysis", *IEICE Transactions on Electronics*, Vol. E87-C, No. 8, pp. 1382-1387, 2004. 08.
- [81] S.S. Yoo, T. Fairney, N.K. Chen, S.E. Choo, L.P. Panych, H.W. Park, **S.Y. Lee**, and F.A. Jolesz, "Brain-computer Interface using fMRI: Spatial Navigation by Thoughts", *NeuroReport*, Vol. 15, No. 10, pp. 1591-1594, 2004. 07.
- [80] B.T. Kim and **S.Y. Lee**, "Sequential Recognition of Superimposed Patterns with Top-Down Selective Attention", *Neurocomputing*, Vol. 58-60, pp. 633-640, 2004. 06.
- [79] **S.Y. Lee**, "Top-Down Selective Attention for Robust Perception of Noisy and Confusing Patterns", *Lecture Notes in Artificial Intelligence*, Vol. 3070, pp. 73-78, 2004. 06.
- [78] Sungmoon Cheong, Sang Hoon Oh and **Soo-Young Lee**, "Support Vector Machines with Binary Tree Architecture for Multi-Class Classification", *Neural Information Processing-Letters and Reviews*, Vol. 2, No. 3, pp. 47-51, 2004. 03.
- [77] Hyung-Min Park, Sang-Hoon Oh, **Soo-Young Lee**, "A Filter Bank Approach to Independent Component Analysis and Its Application to Adaptive Noise Cancelling", *Neurocomputing*, Vol. 55, No. 3-4, pp. 755-759, 2003. 10.
- [76] C.M. Kim, H.M. Park, T. Kim, **S.Y. Lee**, and Y.K. Choi, "FPGA Implementation of ICA Algorithm for Blind Signal Separation and Active Noise Canceling", *IEEE Transactions on Neural Networks*, Vol. 14, No. 5, pp. 1038-1046, 2003. 09.
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## 2. Lecture Notes in Computer Science

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- [4] Nadeem Iqbal and **Soo-Young Lee**, "A Study on Human Gaze Estimation Using Screen Reflection", *Lecture Notes in Computer Science*, Vol. 5326, pp.104-111, 2008. 11.
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- [2] Jihong Liu, Weina Ma, **Soo-Young Lee**, "A Segmentation Method Based on Dynamic Programming for Breast Mass in MRI Images", *Lecture Notes in Computer Science*, Vol. 4901, pp. 307-313, 2008. 01.
- [1] Jaehyung Lee, Taesu Kim, and **Soo-Young Lee**, "Robust Independent Component Analysis using Quadratic Negentropy", *Lecture Notes in Computer Science*, Vol. 4666, pp.227-235, 2007. 09.

## 3. International Conferences

- [229] C.S. Dhir, S.Y. Lee, "Information-theoretic Feature Extraction and Selection for Robust Classification," *SPIE Defense, Security, and Sensing, Conference 7343 - Independent Component Analyses, Wavelets, Neural Networks, Biosystems, and Nanoengineering VII*, Orlando, US, April 13-18, 2009 (Invited Talk)
- [228] S.Y.Lee, "Learning Discriminative Features from Subtle Differences for Efficient Classification," *ICONIP2009 (International Conference on Neural Information Processing)*, Bangkok, Thailand, Nov. 2-5, 2009. (Invited Talk)
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- [224] S.Y. Lee, "Artificial Brain: Brain-Inspired Human-Like Intelligent System", *East-Asia Inter-University Workshop on Brain Engineering 2009*, Kitakyushu, Japan, March 9-11, 2009 (Plenary Talk, abstract only)
- [223] D. K. Oh, S. Y. Lee, "Learning Visual-to-Audio Mapping with Locally Linear Maps on Manifold Structure", *East-Asia Inter-University Workshop on Brain Engineering 2009*, Kitakyushu, Japan, March 9-11, 2009 (abstract only)
- [222] J. Y. Lim, S. Y. Lee and J. H. Choi, "Source Localization of Mouse EEG Based on Independent Component Analysis", *East-Asia Inter-University Workshop on Brain Engineering 2009*, Kitakyushu, Japan, March 9-11, 2009 (abstract only)
- [221] W. I. Chang, S. Y. Lee, "Encoding Spatial Relationship between Elements: Contour Segment Descriptor for Object Detection and Recognition", *East-Asia Inter-University Workshop on Brain Engineering 2009*, Kitakyushu, Japan, March 9-11, 2009 (abstract only)

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- [218]. Chandra Shekhar Dhir and **Soo-Young Lee**, "Information-theoretic feature extraction and selection for robust classification," SPIE Defense, Security, and Sensing, Conference 7343 - Independent Component Analyses, Wavelets, Neural Networks, Biosystems, and Nanoengineering VII, Orlando, US, April 13-18, 2009. (Invited Paper)
- [217] Chandra Shekhar Dhir and **Soo-Young Lee**, "Search-in-Synchrony: Personalizing Web Search with Cognitive User Profile Model", 15th International Conference on Neural Information Processing (ICONIP2008), Auckland, New Zealand, November 25-27, 2008
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- [215] Joong Yup Lim, **Soo-Young Lee**, Hee-Sup Shin, Jee Hyun Choi, "Development of source localization for Mouse EEG", Society for Neuroscience 2008 (SFN 2008), Washington D.C., U.S.A., November 15-19, 2008
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- [213] Paresh Chandra Barman and **Soo-Young Lee**, "Nonnegative Matrix Factorization (NMF) Based Supervised Feature Selection and Adaptation", The 9th International Conference on Intelligent Data Engineering and Automated Learning, Daejeon, Korea, November 2-5, 2008 [LNCS 5326, pp.120-127, 2008. 11.]
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- [210] **Soo-Young Lee**, "Artificial Brain: Brain-Inspired Human-like Intelligent System with Feature Extraction and Selection", IEEE International Conference on Neural Networks & Signal Processing (ICNNSP08), June 8-10, 2008, Zhenjiang, China **(Keynote Talk)**
- [209] **Soo-Young Lee**, Youngik Kim, Jaehyung Lee, Chandra S. Dhir, and Paresh C. Barman, "Artificial Brain: Brain-Inspired Human-like Intelligent System", World Science Forum - Brain, April 28, 2008, Seoul, Korea **(Invited Talk)**
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- [205] **Soo-Young Lee**, "Unsupervised Extraction and Supervised Selection of Features Based on Information Gain", The 1<sup>st</sup> International Conference on Cognitive Neurodynamics, Shanghai, China, November 17-21, 2007 **(Keynote Talk)**
- [204] Chang-Hoon Lee and **Soo-Young Lee**, "HMM-based Top-Down Attention for Noise-Robust Speech Recognition", The 1<sup>st</sup> International Conference on Cognitive Neurodynamics, Shanghai, China, November 17-21, 2007

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- [198] Soo-Young Lee, "Artificial Brain Based on Brain Information Processing Mechanism", IEEE International Conference on Information Acquisition, Jeju, Korea, July 9-11, 2007 (abstract only)
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