

Curriculum Vitae

PERSONAL INFO

Last name:	Lee	Office-Address:	INC, UC San Diego
First name:	Te-Won		La Jolla, CA 9093-0523, USA
Date and Place of Birth:	Chungnam, South-Korea, Born 1969 (Age: 32)	Phone:	(++1-858) 534-9662
		Fax:	(++1-858) 534-2014
Citizenship:	Germany	Email:	tewon@inc.ucsd.edu
Marital Status:	Married	WWW:	http://rhythm.ucsd.edu/~tewon

EDUCATION

Oct. 97 Ph.D. in electrical engineering from the **Technische Universität Berlin**
with highest honor "*summa cum laude*"
Thesis: *Independent Component Analysis: Theory and Applications*
Advisors: *Prof. R. Orglmeister, Prof. T. Sejnowski*

March 95 '*Diplom Ingenieur*' degree in *electrical engineering* from the
Technische Universität Berlin, *GPA=3.8 ("sehr gut")*

Sept. 94 - March 95 *Master Thesis* at the **University of California at Berkeley**, Visiting Scholar in the
Department of EECS, Signal Processing [TU Berlin scholarship]
Project: *Sigma - Delta Modulator for A/D and D/A converter*
Advisors: *Prof. A. Zakhor, Prof. R. Orglmeister*

Oct. 93 - July 94 Graduate studies in microelectronics at the **ENSERG** (Ecole Nationale Supérieure
d'Electronique et de Radioélectricité de Grenoble) in France [*ERASMUS scholarship*]
Advisors: *Prof. H. Berger, Prof. M. Depey*

April 92 - Oct. 93 Graduate studies at the **Technische Universität Berlin**
Aug. 91 **Diplom-Vorprüfung** [*intermediate exam*],
Oct. 89 Enrollment in the course of electrical engineering at the **Technische Universität Berlin**

1982 - 89 **Freiherr vom Stein Gymnasium Abitur** [*Main subjects: Physics and Chemistry*]

HONORS, PRIZES AND SCHOLARSHIPS

1999 *Carl Ramsauer Prize* for excellent dissertations.
Awarded by the **Presidents** of the **TU, FU and Humboldt University** and sponsored
by the **Daimler-Chrysler Corporation**.

1995 *Erwin-Stephan Prize* for excellent studies.
Awarded by the **President** of the **Technische Universität Berlin**

1998 - 1999 **DFG** Postdoc-Fellowship (German Science Foundation, 2 years)

1997 **DAAD** Fellowship (German Academic Exchange Program, 1 year)

1996 **Daimler-Benz** Fellowship (Daimler-Chrysler Corporation, 1 year)

1995 **Max-Planck-Society** Fellowship (Max-Planck Institute, 2 years)
 1994 **TU Berlin** Scholarship (Technische Universitaet, 1 year)
 1993 **ERASMUS** Scholarship (European Community, 1 year)

RESEARCH EXPERIENCE

Since June 99 **Research Assistant Professor** at the **University of California, San Diego**, Institute for Neural Computation in *La Jolla, USA*.

Feb. 97 - June 99 **Research Associate** at the **Computational Neurobiology Lab, The Salk Institute** in *La Jolla, USA*, [DFG Fellowship],
 Advisor: *Prof. Terrence Sejnowski*

Feb. 96 – Jan. 97 **Visiting Researcher** in the **School of Computer Science (Interactive Systems Group), Carnegie Mellon University** in *Pittsburgh, USA*. [Daimler-Benz. Fellowship],
 Advisor: *Prof. Alex Waibel*

April 95 – Jan. 96 **Ph.D. – Student** in the **Max-Planck-Society, Computer Science Institute, Fault-Tolerant Computing Group** in *Potsdam, Germany* [Max-Planck Ph.D. Fellowship]
 Advisor: *Prof. Michael Gössel*

INDUSTRY EXPERIENCE

Since 1998 **Consultant to:**
 Microsoft Research, Symbol Technologies, Samsung, SAIT.

Since July 99 **Co-Director, Industrial Affiliates Program,**
 Institute for Neural Computation, University of California, San Diego.
 Program to promote interactions between industry and the institute.

Since March 98 **President and Chief Technical Officer** and co-founder of **SoftMax, Inc.** in *La Jolla, USA*. Intelligent software development company, 10 employees.

April 94 - July 94 Practical Training at **DOLPHIN INTEGRATION** in *Grenoble, France*
 Project: *Fast parallel multipliers for a multiplier generator*

July – Oct. 90 Practical Training at **Bosch GmbH** in *Berlin, Germany*

TEACHING EXPERIENCE

June 99 - August 99 Visiting Professor in the Department of Electrical Engineering, **Korea Advanced Institute of Science and Technology**
"Unsupervised Learning"
 [54h summer course for 20 graduate student and 10 visiting scholars]

April 93 – Oct. 93	Teaching Assistant in the Semiconductor Materials and Devices Institute "Materials and Devices in Electrical Engineering" [40h per month, undergrad. course] Advisor: Prof. W. Gerlach
Oct. 92 - April. 93	Teaching Assistant in the Mathematics Department "Mathematics for Electrical Engineers" [75 h per month, undergrad. course] Advisor: Prof. Winckler
Supervised graduate students and postdoctoral fellows	Dr. Oh-Wook Kwon Dr. Erik Visser Dr. Suman Mitra Kwokleung Chan Eizaburo Doi Gil-Jin Jang

AWARDED GRANTS

May 2001 1 year	University of California, Digital Media Innovation Program , Principal Investigator, "Affective Computing in Robots", co-sponsored by Sony Corporation supports two postdocs, faculty (partial), admin. staff (partial), equipment.
April 2000 6 months & 2 years	Office of Naval Research , co-PI with Dr. Tzyy-Ping Jung, "Alertness Monitoring Technology Using EEG", Small Business Innovative Research (SBIR 1 st phase & 2 nd phase).
April 2000 6 months	Sony Corporation , Principal Investigator, "Adaptive Signal Processing Applications", supports graduate student, faculty (partial).
March 2000 2 years	University of California, Digital Media Innovation Program , Principal Investigator, "Intelligent Sound and Image Processing Software", supports two postdocs, faculty (partial), admin. staff (partial), equipment.
Nov. 1999 1 year	Swartz Foundation , Principal Investigator, "Computational Neuroscience", supports faculty (partial).
May 1999 3 years	National Science Foundation , co-PI with Prof. Bhaskar Rao, UCSD, "Robust Feature Extraction For Speech Recognition", supports two graduate students, faculty (partial).

WORKSHOP AND CONFERENCE ORGANIZATION

2002	Program Committee, Intl. Conf. On Neural Information Processing (ICONIP'2002)
2001	Program Chair, International Workshop on Independent Component Analysis and Blind Source Separation , San Diego, December 2001.
2000	Co-organizer, ICONIP'2000 special session on <i>Models of Natural Image Statistics</i> .

- 2000 Co-organizer, **ICONIP'2000 special session** on *Blind Adaptive Filtering and Independent Component Analysis*.
- 2000 Program Committee, **Intl. Conf. On Neural Information Processing (ICONIP'2000)**
- 2000 Program Committee, **Biological Inspired Systems (BIS'2000)**
- 2000 Program Committee, **International Symposium on Neural Computation (NC 2000)**
- 2000 Program Committee, **International Workshop on Independent Component Analysis and Blind Source Separation**, Helsinki, June 2000.
- 1999 Organizer, **NIPS'99 Workshop on Overcomplete Representations and nonlinear ICA**

INVITED TALKS

- November 01 **UC Berkeley, Statistics Department, USA**
- October 01 **Statistical Institute of Japan, Tokyo, Japan**
- October 01 **Hanyang University, Biomedical Department, Seoul, Korea**
- October 01 **Seoul National University, EECS Department, Seoul, Korea**
- June 01 **Axon Inc., Silicon Valley, USA**
- March 01 **Northwestern University, Chicago, USA**
- February 01 **Microsoft Corporation, Seattle, USA**
- November 00 **ICONIP'2000 Conference, Invited Tutorial, Taejon, Korea**
- October 00 **Department of Statistics, UCLA, Los Angeles, USA**
- September 00 **Department of Mathematical and Computer Sciences, SDSU, San Diego, USA**
- August 00 **SPIE'2000 Conference, San Diego, USA**
- May 00 **Sony Corporation, Tokyo, Japan**
- May 00 **Denso Corporation, Nagoya, Japan**
- March 00 **24th Conference Gesellschaft fuer Klassifikation, Passau, Germany**
- February 00 **Symbol Technology Conference, Las Vegas, USA**
- October 99 **Bell Labs, New Jersey, USA**
- September 99 Department of Computer Science, **Free University Berlin, Germany**
- July 99 Department of Neurology, **Seoul National University, Korea**
- July 99 Samsung Advanced Institute of Technology (**SAIT**), Korea
- July 99 International Workshop on **Stochastic Dynamics & Pattern Formation**, Seoul, Korea
- March 99 **Dagstuhl Seminar** on Unsupervised Learning, Wandern, Germany
- March 99 **AI seminar series**, Department of computer science, UCSD, San Diego, USA
- January 99 **Gordon Research Conference** on Bioanalytical Sensors, California, USA
- July 98 Department of electrical engineering, **Seoul National University, Korea**
- July 98 **Korea Advanced Institute of Science and Technology**, Brain research center, Korea
- June 98 **RIKEN**, Prof. Amari's group, Japan
- June 98 Speech recognition group at **ATR** in Japan
- June 98 **Sony Computer Science Research Center** in Tokyo, Japan,
- October 97 **GMD First** in Berlin, Germany
- July 97 **Telluride Workshop** (3 weeks) on neuromorphic VLSI design, Colorado, USA
- June 97 **McDonnell – Pew Center** for cognitive neuroscience, San Diego, California, USA
- January 97 TIRF, **Institute Nationale Polytechnique de Grenoble**, France
- Dec. 96 Special session on blind source separation at **NIPS'96** Workshop in Colorado, USA
- Dec. 95 **Daimler – Benz**, Fellowship seminar, Germany

ACADEMIC EDITORIAL

Reviewer for **Neural Computation,**
IEEE Circuits and Systems,
IEEE Transactions on Signal Processing,
IEEE Signal Processing Letters,
IEEE Transactions on Neural Networks,
Journal of Neuroscience Methods,
Kluwer Academic Publishers,
Cambridge University Press
Physics Letters Review
Electronic Letters

Guest Editor *Neurocomputing Journal,*
Special Issue on "Independent Component Analysis & Blind Source Separation"

LANGUAGE SKILLS

Native language: German, Korean
Foreign language: English [*fluently*], French [*fluently*]

PERSONAL ACTIVITIES AND INTERESTS

Since Oct. 98 Korean-American Scientists and Engineers Association (KSEA), Director in San Diego.
Since Nov. 97 Member of the San Diego Korean Calvary Church Choir
Since March 95 **IEEE** Associate Member

List of Publications

BOOKS

- B1. Published Te-Won Lee, "**Independent Component Analysis: Theory and Applications**", *Kluwer Academic Publishers*, Boston, ISBN: 0 7923 8261 7, September 1998. (over 600 copies sold)

BOOKCHAPTERS

- C1. Published T.-W. Lee, A. Bell and R. Lambert "**Blind Separation of Delayed and Convolved Sources**", *Advances in Neural Information Processing Systems 9*, pp. 758-764, MIT Press, Cambridge, 1997.
- C2. Published T.P Jung, C. Humphries, T.-W. Lee, S. Makeig, M. McKeown, V. Iragui, T. Sejnowski. "**Extended ICA Removes Artifacts from Electroencephalographic Recordings**" *Advances in Neural Information Processing Systems 10*, pp. 894-900, MIT Press, Cambridge, 1998.
- C3. Published T.-W. Lee, M.S. Lewicki, T.J. Sejnowski "**Unsupervised Classification with non-Gaussian Mixture Models using ICA**", *Advances in Neural Information Processing Systems 11*, pp. 508-514, MIT Press, Cambridge, 1999.
- C4. Published, Inv. chapter T.-W. Lee, M.S. Lewicki "**Image Processing Methods Using ICA Mixture Models**", *ICA: Principles and Practice*, Cambridge University Press, 234-254, April 2001.
- C5. Published T.-W. Lee, T. Wachtler and T.J. Sejnowski "**Color Opponency Constitutes A Sparse Representation For the Chromatic Structure of Natural Scenes**" *Advances in Neural Information Processing Systems 13*, 866-872, MIT Press, Cambridge, 2001

JOURNALS

- J1. Published M. Motamed, A. Zakhor, S. Sanders, T.-W. Lee "**Spectral Characteristics of the Double Loop Sigma Delta Modulator**", *IEEE Transactions on Circuits and Systems II: Analog and Digital Signal Processing*, Jan. 1998, vol.45, (no.1):144-7
- J2. Published M. McKeown, T.P. Jung, S. Makeig, G. Brown, S. Kindermann, T.-W. Lee, T. Sejnowski. "**Statistically independent activity patterns in functional magnetic resonance imaging data during the stroop colornaming task.**", *Proceedings of the National Academy of Science*.95: 803-10, Jan. 1998.
- J3. Published T.-W. Lee, M. Girolami and T. Sejnowski " **Independent component analysis using an extended infomax algorithm for mixed sub-Gaussian and super-Gaussian sources**", *Neural Computation*, MIT Press, 1999, Vol.11(2): 609-633.

- J4. Published T.-W. Lee, M. Girolami and T. Sejnowski "A unifying framework for independent component analysis", *Computers and Mathematics with Application*, Vol 39(11), 1-21, March 2000.
- J5. Published T.P Jung, C. Humphries, T.-W. Lee, S. Makeig, M. McKeown, V. Iragui, T. Sejnowski. **"Removing Electroencephalographic Artifacts by Blind Source Separation"** *Psychophysiology*, 37:167-78, March 2000.
- J6. Published T.-W. Lee, M. Lewicki, M. Girolami, T. Sejnowski **"Blind source separation of more sources than mixtures using overcomplete representations. *IEEE Signal Processing Letters***, Vol 6, no 4, April 1999.
- J7. Published T.-W. Lee, M.S. Lewicki and T.J. Sejnowski **"Unsupervised Classification with non-Gaussian Sources and Automatic Context Switching in Blind Signal Separation "**, *IEEE Transactions on Pattern Analysis and Machine Intelligence*, Vol 22(10), 1078-1089, Oct. 2000.
- J8. Published H.-M. Park, H.-Y. Jung, T.-W. Lee and S.-Y. Lee **"On Subband-Based Blind Signal Separation for Noisy Speech Recognition"**, *Electronic Letters*, Vol. 35(23), 2011-2012, 1999.
- J9. Published U.-M. Bae, T.-W. Lee and S.-Y. Lee **"Blind signal separation in teleconferencing using the ICA mixture model"** *Electronic Letters*, Vol. 37(7), 680-682, 2000.
- J10. Published T. Wachtler, T.-W. Lee and T.J. Sejnowski **"The Chromatic Structure of Natural Scenes"**, *Journal of the Optical Society of America A*, Vol 18(1), 65-77, Jan. 2001.
- J11. Published, invited paper T.-P. Jung, S. Makeig, M. McKeown, A. J. Bell, T.-W. Lee, T. J. Sejnowski **"Imaging Brain Dynamics Using Independent Component Analysis"**, *IEEE Proceedings*, 89 (7): 1107-22, August 2001.
- J12. Published J-H. Lee, H-J. Jung, T-W. Lee and S-Y. Lee. **"Speech enhancement with MAP estimation and ICA-based speech features"** *Electronic Letters*, Vol 36(17), 1506-1507, 2000.
- J13. Published H.-M. Park, H.-Y. Jung, T.-W. Lee and S.-Y. Lee **"Independent Component Analysis on a Subband Domain for Robust Speech Recognition"**, *The Journal of the Institute of Electronics Engineers of Korea*, 2000.
- J14. In press T.-W. Lee and M.S. Lewicki **"Unsupervised Classification, Segmentation, Denoising of Images using ICA Mixture Models"** *IEEE Transactions on Image Processing*
- J15. In press G.-J. Jang, T-W. Lee and Y.-H. Oh **"Speaker Recognition Using ICA Mixture Models"** *Neurocomputing, special issue on ICA and BSS*.
- J16. In press M.H. Goldbaum, P.A. Sample, J. M. Williams K.L. Chan, T.W. Lee, D. Najafi, T.J. Sejnowski, R.N. Weinreb. **"Comparing Machine Classifiers for Diagnosing Glaucoma from Standard Automated Perimetry"**, *Investigative Ophthalmology and Vision Science (IOVS)* 2001

PROCEEDINGS

- P1. Published M. Motamed, A. Zakhor, S. Sanders, T.-W. Lee **"Spectral Characteristics of the Double Loop Sigma Delta Modulator"**, *IEEE International Symposium on Circuits and Systems*, vol.1, pp. 457-460, Atlanta, May1996.

- P2. Published T.-W. Lee and R. Orglmeister "**A Contextual Blind Separation of Delayed and Convolved Sources**", *IEEE International Conference on Acoustics, Speech and Signal Processing*, pp. 1199-1203, Munich, April 1997.
- P3. Published T.-W. Lee, A. Bell and R. Orglmeister "**Blind Separation of Real World Recordings**", *IEEE International Conference on Neural Networks*, pp. 2129-2135, Houston, June 1997.
- P4. Published T.-W. Lee and T. Sejnowski "**Independent Component Analysis for Sub-Gaussian and Super-Gaussian Mixtures**", *4th Joint Symposium on Neural Computation*, Institute for Neural Computation, vol. 7, pp. 132-139, June 1997.
- P5. Published T.-W. Lee, B. Koehler and R. Orglmeister "**Blind Separation of Nonlinear Mixing Models**", *IEEE International Workshop on Neural Networks for Signal Processing*, pp. 406-415, Sept. 1997.
- P6. Published S. Makeig, T.P. Jung, T.-W. Lee, T. Sejnowski. "**Independent component analysis of steady-state responses**" *Symposium on steady-state responses for the Soc. For Psychophysiology Research (SPR)*, 1997.
- P7. Published B.U. Koehler, T.-W. Lee and R. Orglmeister. "**Improving The Performance of Infomax Using Statistical Signal Processing Techniques**", *International Conference in Artificial Neural Networks (ICANN)*, pp. 535-540, Oct. 1997.
- P8. Published, invited paper T.-W. Lee, A. Ziehe, R. Orglmeister, T. Sejnowski "**Combining time-delayed decorrelation and infomax: Towards solving the cocktail party problem**", *IEEE International Conference on Acoustics, Speech and Signal Processing*, pp. 1249-1252, Seattle, May 1998.
- P9. Published T.P Jung, C. Humphries, T.-W. Lee, M. McKeown, V. Iragui, S. Makeig T. Sejnowski. "**Removing Electroencephalographic Artifacts: Comparison between ICA and PCA**. *IEEE International Workshop on Neural Networks for Signal Processing*, pp. 63-72, Cambridge, June 1998.
- P10. Published T.-W. Lee, M.S. Lewicki and T.J. Sejnowski "**ICA Mixture Models For Unsupervised Classification And Automatic Context Switching**", *International Workshop on Independent Component Analysis (ICA'99)*, pp. 209-214, Aussie, Jan.1999.
- P11. Published T-W. Lee, M.S. Lewicki and T.J. Sejnowski. "**ICA mixture models for image processing**", *6th Joint Symposium on Neural Computation*, Institute for Neural Computation, pages 79-86, Caltech, May 1999
- P12. Published K. Kreutz-Delgado, B.D. Rao, K. Engan, T-W. Lee and T.J. Sejnowski. "**Convex/Schur-Convex (CSC) Log-Priors and Sparse Coding**", *6th Joint Symposium on Neural Computation*, Institute for Neural Computation, pages 65-71, Caltech, May 1999.
- P13. Published K. Kreutz-Delgado, B.D. Rao, K. Engan, T-W. Lee and T.J. Sejnowski. "**Learning Overcomplete Dictionaries: Convex/Schur-Convex (SCS) Log-Priors, Factorial Codes, and Independent/Dependent Component Analysis (I/DCA)**", *6th Joint Symposium on Neural Computation*, Institute for Neural Computation, pages 72-78, Caltech, May 1999.
- P14. Published H.-M. Park, H.-Y. Jung, T.-W. Lee and S.-Y. Lee "**On Subband-Based Blind Source Separation for Noisy Speech Recognition**", *International Conference On Neural Information Processing*, Vol. 1, 204-209, 1999.
- P15. Published, invited paper T.-W. Lee "**Nonlinear Approaches to Independent Component Analysis**", *Proceedings of the American Institute of Physics*, Oct. 1999.

- P16. Published, invited paper T.-W. Lee, M. S. Lewicki "**Learning Classes Of Efficient Codes**", *Proceedings of the International Society for Optical Engineering (SPIE)*, San Diego, July 2000.
- P17. Published T.-W. Lee, T. Wachtler and T.J. Sejnowski "**The Spectral Independent Components of Natural Scenes**", *Biologically Motivated Computer Vision*, Springer Verlag, May 2000.
- P18. In press, invited paper T.-W. Lee, M. S. Lewicki "**Unsupervised classification of non-Gaussian sources**", *Proceedings of the 24th Gesellschaft fuer Klassifikation*, Springer Verlag March 2000.
- P19. Published J.-H. Lee, H.-J. Jung, T.-W. Lee and S.-Y. Lee. "**Speech Feature Extraction Using Independent Component Analysis**" *IEEE International Conference on Acoustics, Speech and Signal Processing*, III 1631-4, June 2000.
- P20. Published T.-W. Lee, M. S. Lewicki "**The Generalized Gaussian Mixture Model Using ICA**", *International Workshop on Independent Component Analysis (ICA'00)*, Helsinki, pages 239-244, June.2000.
- P21. Published, Invited paper T.-P. Jung, S. Makeig, T.-W. Lee, M. McKeown, G. Brown, A. J. Bell, T. J. Sejnowski "**Independent Component Analysis of Biomedical Signals**", *International Workshop on Independent Component Analysis (ICA'00)*, Helsinki, pages 633-644, June.2000.
- P22. Published J.-H. Lee, H.-J. Jung, T.-W. Lee and S.-Y. Lee. "**Speech Coding and Noise Reduction Using ICA-based Speech Features**" *International Workshop on Independent Component Analysis (ICA'00)*, Helsinki, pages 417-422, June.2000.
- P23. Published H.-M. Park, T.-W. Lee and S.-Y. Lee "**Blind Source Separation Based on Wavelet Filter Banks**", *Intl. Conf. On Neural Information Processing 2000*, Taejon, Korea, 1210-1215, Nov. 2000.
- P24. Published T.-W. Lee and G.-J. Jang "**The Statistical Structure Of Male and Female Speech Signals**" *IEEE International Conference on Acoustics, Speech and Signal Processing*, May 2001.
- P25. Published G.-J. Jang, T.-W. Lee and Y.-H. Oh "**Speaker Recognition Using ICA**" *IEEE International Conference on Acoustics, Speech and Signal Processing*, May 2001.
- P26. Published K.-L. Chan, T.-W. Lee, M.H.Goldbaum, P.A.Sample, R.N. Weinreb and T.J. Sejnowski. "**Comparison of Machine Learning and Traditional Classifiers in Glaucoma Diagnosis**", *8th Joint Symposium on Neural Computation*, Institute for Neural Computation, San Diego, June 2001
- P27. In press G.-J. Jang, T.-W. Lee and Y.-H. Oh "**Blind Separation of Single Channel Mixture Using ICA Basis Functions**" *International Workshop on Independent Component Analysis (ICA'01)*, San Diego, Dec. 2001.
- P28. In press E. Visser, T.-W. Lee and M. Otsuka "**Speech Enhancement in a Noisy Car Environment**" *International Workshop on Independent Component Analysis (ICA'01)*, San Diego, Dec. 2001.
- P29. In press K.-L. Chan, T.-W. Lee and T.S. Sejnowski "**Variational Learning of Clusters of Undercomplete Nonsymmetric Independent Components**" *International Workshop on Independent Component Analysis (ICA'01)*, San Diego, Dec. 2001.

ABSTRACTS

- A1. Published M.H. Goldbaum, P.A. Sample, J. M. Williams K.L. Chan, T.W. Lee, D. Najafi, T.J. Sejnowski, R.N. Weinreb. **"Determination Of Optimal Visual Field Locations By Feature Selection With Neural Networks"**, ARVO 2001
- A2. Published P.A. Sample, J. Williams, E. Blumenthal, K.L. Chan, T.W. Lee, D. Najafi, T.J. Sejnowski, R.N. Weinreb, M.H. Goldbaum. **"Visual Field Classification Comparing Neural Networks, Statistical Classifiers, Statpac, and a Glaucoma Expert"**, ARVO 2001
- A3. Published C. Bowd, K.L. Chan, L.M. Zangwill, T.W. Lee, T.J. Sejnowski, M.H. Goldbaum, R.N. Weinreb. **"Comparison of Learning Neural Networks and Linear Discriminant Functions to Discriminate Between Glaucomatous and Non-Glaucomatous Eyes Using HRT Optic Disc Topography Parameters"**, ARVO 2001
- A4. Published Lee JS, Ahn JY, Lee DS, Kim SK, Chun GJ, Kang KW, Jang MJ, Lee TW, Park KS, Chung JK, Lee MC **"Blind separation of cardiac components and extraction of input function from (H2O)-O-15 dynamic myocardial PET using independent component analysis: A validation study."** JOURNAL OF NUCLEAR MEDICINE 41 (5): 386, Suppl. S MAY 2000
- A5. Published Sample PA, Goldbaum MH, Chan K-L, Boden C, Lee T-W, Sejnowski T, Johnson CA, Weinreb RN: **Machine classifiers predict development of abnormal standard visual fields in ocular hypertensive eyes.** North American Perimetric Society Meeting, September 28-29, 2001, Skaneateles, NY
- A6. Published E. Doi; T.-W. Lee; T. Wachtler; T. Inui; T. J. Sejnowski **"Spatial and chromatic filters derived from an information-theoretic analysis of natural scenes"** Society of Neuroscience Meeting, November, 2001, San Diego.

PATENTS

- PA1. Pending 09/418099 Te-Won Lee, Michael Lewicki, Terrence Sejnowski **"Unsupervised Adaptation and Classification of Multiple Classes and Sources in Blind Source Separation"**, *The Salk Institute*, October 1999.
- PA2. Pending Te-Won Lee, Michael Lewicki, Terrence Sejnowski **"Unsupervised Adaptation and Classification of Multi-Source Data Using A Generalized Gaussian Mixture Model"**, *The Salk Institute*, October 2000.
- PA3. Pending Te-Won Lee, Thomas Wachtler, Terrence Sejnowski **"Methods and Apparatus for Efficiently Encoding Chromatic Information Using Blind Signal Separation Processes"**, *The Salk Institute*, January 2001.
- PA4. Provision Te-Won Lee, Gil-Jin Jang **"Methods and Apparatus for Speech Processing Using ICA"**, *SoftMax*, January 2001.
- PA5. Provision Jeng-Ren Duann, Tzyy-Ping Jung, Te-Won Lee **"Methods and Apparatus for Cardiac Arrhythmia Processing Using ICA"**, *SoftMax*, June 2001.

SUBMITTED JOURNAL PAPERS

- S1. Submitted Oct 99 K. Kreutz-Delgado, B.D. Rao, K. Engan, T-W. Lee and T.J. Sejnowski. "**Supergaussian Priors – Sufficient for Sparse Coding?**".
- S2. Submitted March 00 U.-M. Bae, T.-W. Lee and S.-Y. Lee "**Blind Signal Separation In Nonstationary Environments Using The ICA Mixture Model**".
- S3. Submitted T.-W. Lee, T. Wachtler and T.J. Sejnowski "**Color Opponency Constitutes A Sparse Representation For the Chromatic Structure of Natural Scenes**".
- S4. Submitted March 01 G.-J. Jang, T-W. Lee and Y.-H. Oh "**The Statistical Structures of Male and Female Speech Signals**" *IEEE Transactions on Speech and Acoustic Processing*

SUBMITTED GRANT PROPOSALS

- G1. Submitted Feb. 2000 K. Kreutz-Delgado, B.D. Rao, M. S. Lewicki and T-W. Lee "**Learning and Data Exploration in Natural Environments**", National Science Foundation
- G2. Submitted March 2000 K. Kreutz-Delgado, B.D. Rao and T-W. Lee "**Sparse Coding and ICA Algorithms in Human/Computer Interactive (HCI) Environments**", National Science Foundation
- G3. Submitted August 2000 M. Goldbaum and T-W. Lee "**Medical Assistance from Glaucoma Informatics**", National Institute of Health