CURRICULUM VITAE

Prof. Erkki Oja, Aalto University
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- ADDRESS AND CONTACT:
  - Aalto University, School of Science and Technology, Department of Information and Computer Science, P.O.B. 15400 (Konemiehentie 2), 00076 Aalto, Finland
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    Email: `erkki.oja@hut.fi`
    WWW: `http://www.cis.hut.fi/oja/`
- DATE AND PLACE OF BIRTH: March 22, 1948 Helsinki, Finland
- CITIZENSHIP: Finnish
- EDUCATION, DEGREES (incl. honorary)
  - Helsinki University of Technology, Department of Technical Physics, Diploma Engineer (M.Sc.), November 1972; Licentiate in Technology, June 1975 (with honors); Doctor of Technology, April 1977 (with honors)
  - Uppsala University, Doctor of Philosophy (h.c.), January 2008
  - Lappeenranta University of Technology, Doctor of Science (h.c.), May 2008
- LANGUAGES: 1. Finnish, 2. English (fluent), 3. Swedish, 4. German
- FAMILY STATUS: Married since 1975 to Dr. Marja Oja, two children (Dr. Merja Oja, b. 1979, Ms. Riitta Oja, b. 1981)
- MILITARY SERVICE: Finnish Army, 1973 - 1974, rank: ensign
- AREAS OF SCIENTIFIC INTEREST
  - Neural computation; machine learning; pattern recognition, especially statistical methods; image processing; signal processing; data analysis and mining; artificial intelligence.
- EMPLOYMENT
  - *1993 - present*: Professor of Computer Science and Engineering, Helsinki University of Technology (HUT).
  - *2007 - present*: Chairman, Research Council for Natural Sciences and Engineering, the Academy of Finland.
  - *2006 - present*: Director, Adaptive Informatics Research Centre (National Centre of Excellence, 2006 - 2011).
  - *2000 - 2005*: Academy Professor, Academy of Finland. Director, Neural Networks Research Centre (National Centre of Excellence, 2000 - 2005). *1993 - 2000, 2006 - 2007*: Head of the Laboratory of Computer and Information Science at HUT. *1996 - 2000*: Chairman of the Scientific Council of Information Technology at HUT. *1997 - 2000*: Member of the Governing Board of HUT. *1999 - 2000*: Member of the Research Council of HUT.
  - *April - May 2001*: Visiting Professor, Université Paris I - Panthéon Sorbonne, Paris, France.
  - *1987 -93*: Professor of Computer Science, Lappeenranta University of Technology, Department of Information Technology, Lappeenranta, Finland. Head of the Laboratory of Information Processing Science. *1992 - 93*: Chairman of the Department of Information Technology and member of the Governing Board of Lappeenranta University of Technology.
  - *1990 -91*: Visiting Professor (Intelligent Information Processing Systems) of the Toshiba Endowed Chair, Tokyo Institute of Technology, Department of Computer Science, Tokyo, Japan.

- *1981 - 87*: Associate Professor of Applied Mathematics, Kuopio University, Kuopio, Finland. Head of the Department of Applied Mathematics. *1986 - 87*: chairman of the Council of Kuopio University.
- *1985 - 86*: Acting Professor of Computer Science, Kuopio University.
- *1983 - 84*: Visiting Research Scholar, Tokyo Institute of Technology, Department of Computer Science.
- *1979 - 81*: Senior Research Fellow, Academy of Finland, at Laboratory of Information and Computer Science, Helsinki University of Technology.
- *1976 - 78*: Junior Research Fellow, Academy of Finland
- *1977 - 78*: Research Associate, Brown University, Center for Cognitive Science, Providence, RI, USA.
- *1975*: Acting Associate Professor of Technical Physics (Electronics), Helsinki University of Technology.

- SUPERVISED RESEARCH PROJECTS since 1995
  - Neural network methods in machine vision, 1995 - 96 (Academy of Finland)
  - Learning and intelligent image and signal analysis, 1995 - 98 (Tekes, enterprises)
  - Intelligent processing and analysis of images and speech, 1996 - 99 (Academy of Finland)
  - Intelligent methods for processing and exploration of signals and systems, 1998 - 99 (Tekes, enterprises)
  - Blind source separation and deconvolution in telecommunications and array signal processing, 1998 - 2000 (Academy of Finland)
  - New information processing principles - Centre of Excellence project, 2000 - 2005 (Academy of Finland, Tekes)
  - Blind signal separation in communication receivers and antenna array systems, 2001 - 2004 (Academy of Finland)
  - Blind source separation and applications, 2000 - 2003 (European Union)
  - Adaptive Informatics Research Centre - Centre of Excellence project, 2006 - 2011 (Academy of Finland, Tekes, Nokia Co.)
  - In addition, several *non-public* projects with industry money, with post-graduate level research staff (e.g. ABB, Nokia, Finnvera)
- SUPERVISED DOCTOR'S THESES (37)
  - Juha Karhunen, 1984, Helsinki University of Technology (HUT); Jussi Parkkinen, 1989, Kuopio University; Pasi Koikkalainen, 1992, Lappeenranta University of Technology (LUT); Jouko Lampinen, 1993, LUT; Heikki Kälviäinen, 1994, LUT; Jukka Heikkonen, 1994, LUT; Liuyue Wang, 1996, HUT; Jorma Laaksonen, 1997; Aapo Hyvärinen, 1997; Kimmo Valkealahti, 1998; Petteri Pajunen, 1998; Jukka Iivarinen, 1998; Ricardo Vigario, 1999; Markus Peura, 2001; Maria Funaro, 2002, University of Salerno (co-supervised); Vuokko Vuori, 2002; Patrik Hoyer, 2002; Markus Koskela, 2003; Jarmo Hurri, 2003; Ella Bingham, 2003; Mikko Kolehmainen, 2004; Jaakko Särelä, 2004; Janne Sinkkonen, 2004; Jaakko Peltonen, 2004; Ville Könönen, 2004; Mika Inki, 2004; Karthikesh Raju, 2006; Mathias Creutz, 2006; Juha Karvonen, 2006; Jussi Pakkanen, 2006; Alexander Ilin, 2006; Matti Aksela, 2007; Vesa Siivola, 2007; Ramunas Girdziusas, 2008; Zhirong Yang, 2008; Zhijian Yuan, 2009; Teemu Hirsimäki, 2009; all HUT.
- SUPERVISED M.SC. AND LIC.TECH. THESES: about 100.
- EDITORIAL BOARDS OF SCIENTIFIC JOURNALS
  - *IEEE Transactions on Neural Networks*: Associate Editor until 2001. *Neural Networks*: Editorial Board Member until 1996. *International Journal of Neural Systems*: Associate Editor until 1994. *Pattern Recognition Letters*: Editorial

Board Member until 2002. *Neural Computation*: Action Editor. *International Journal of Pattern Recognition and Artificial Intelligence*: Associate Editor. *International Journal of Computer Research*: Editorial Board Member. *Natural Computing*: Area Editor in neural computing.

- CONFERENCE COMMITTEES
  - *Chairman in international conferences*: 6th Scandinavian Conference on Image Analysis (6 SCIA), Oulu, Finland, June 1989. Advances in Intelligent Data Analysis (AIDA'99), Rochester, NY, June 1999. Int. Workshop on Independent Component Analysis and Blind Signal Separation (ICA2000), Espoo, Finland, June 2000. Engineering Intelligent Systems (EIS2000), Glasgow, Scotland, June 2000 (Honorary Chairman). 2nd Euro-International Symp. on Computational Intelligence (E-ISCI2002), Kosice, Slovakia, June 2002 (Honorary Chairman). Engineering Intelligent Systems (EIS2004), Madeira, Portugal, March 2004 (Honorary Chairman). Int. Conf. on Neural Information Processing (ICONIP2004), Calcutta, India, November 2004 (Co-chairman). IEEE Int. Workshop on Machine Learning for Signal Proc. (MLSP2010), Kittilä, Finland, August 2010. Int. Conf. on Artificial Neural Networks (ICANN2011), Espoo, Finland, June 2011.
  - *Chairman or co-chair of Program Committee in international conferences*: 2nd Scandinavian Conference on Image Analysis (2 SCIA), Espoo, Finland, 1981. International Conference on Neural Information Processing (ICONIP), Hong Kong, 1996. Workshop on the Self-Organizing Map (WSOM'97), Espoo, Finland, 1997. Workshop on the Self-Organizing Map (WSOM'99), Espoo, Finland. International Conference on Neural Information Processing (ICONIP), Taejon, Korea, 2000. Int. Conf. on Artificial Neural Networks (ICANN), Istanbul, Turkey, June 2003, Warsaw, Poland, September 2005, and Athens, Greece, September 2006.
- OTHER SCIENTIFIC ACTIVITIES
  - Opponent in 40 doctoral dissertations in Finland and Europe
  - Evaluator in numerous Ph.D., D.Sc., and Dr. Habil. Theses
  - Evaluator in filling more than 20 professor's chairs in Finland, Europe, and USA
  - Evaluator of research proposals for National Science Foundation (USA), European Union, European research organizations, and European and Asian universities
  - Member, advisory board on information technology and data communications, State Technical Research Centre, 1994 - 1997
  - Member, advisory board of Indecon Ltd., 1994 - 1998
  - Member, advisory board of the Data Processing Society, 1995 - 2000
  - Member, steering group of the technology program on Adaptive and Intelligent Systems Applications, 1994 - 1999
  - Member, advisory board of the Leiden Centre for Natural Computing, 1998 - present
  - Member, advisory board of Springer Verlag book Series on Natural Computing, 1998 - present
  - Member, governing board of Nokia Foundation, 1999 - 2001
  - Member, governing board of A. Kordelin Foundation, 2000 - 2008
  - Member, governing board of NNets, inc., 2000
  - Member, Advisory and Review Board of CELEST, Boston University, 2004 - present.
- PLENARIES, INVITED TALKS, TUTORIALS, AND INVITED LECTURES
  - 21 plenary talks in major international conferences

- 8 invited talks in major international conferences
- 8 tutorials in major international conferences
- Numerous talks in international conferences and workshops as well as guest lectures in industry and universities

- PROFESSIONAL SOCIETIES: INTERNATIONAL
  - Institute of Electrical and Electronics Engineers, Inc. (IEEE). Student member 1975, member 1978, Senior member 1990, Fellow 2000.
  - IEEE Neural Networks Council (NNC), Neural Networks Technical Committee. Member 1994 - 1999.
  - IEEE Circuits and Systems Society (CAS), Technical Committee on Blind Signal Processing. Member 2001 - present.
  - International Association for Pattern Recognition (IAPR). Member of the Governing Board, 1987 - 2000.
  - European Neural Network Society (ENNS). Member of the ENNS Council, 1992 - present. Vice President, 1994 - 1998, President-elect, 1998 - 1999, President, 2000 - 2005, Past-President, 2006 - 2008.
  - International Neural Network Society (INNS). Member of the Board of Governors, 2002 - 2007. Chairman of the Awards Committee, 2002 - 2007. College of Fellows member, 2008 - present.

- PROFESSIONAL SOCIETIES: NATIONAL
  - IEEE Finland Section. Vice President, 1985 - 1990.
  - Finnish Chapter of the IEEE Computational Intelligence Society. Chairman, 2003 - present.
  - Pattern Recognition Society of Finland. Founding member, 1977 - 2002. Honorary member, 2002 - present. Chairman, 1986 - 1989. Governing Board member, 1989 - 1994.
  - Academy of Technical Sciences (Finland), member, 1988 - present.
  - Finnish Academy of Sciences and Letters, member, 1992 - present. Chairman of the group of computer science and special fields, 1999 - 2000. Vice-chairman of the group of mathematics and computer science, 2001 - 2008.

- HONORS AND AWARDS
  - Matsumae Fellow, Tokyo, 1983
  - IAPR (International Association for Pattern Recognition) Founding Fellow, 1994
  - IEEE Fellow, 2000
  - INNS Fellow, 2008
  - Biographee, Marquis *Who's Who in the World* (Marquis Who's Who, Inc., USA), since 1987
  - SPIE Unsupervised Learning and ICA Pioneer Award, 2004
  - ICPR Pierre Devijver Award, 2004
  - IEEE Computational Intelligence Society Neural Network Pioneer Award, 2006
  - Knight of the White Rose of Finland, 2006
  - Honorary doctor, University of Uppsala (Sweden), 2008; Lappeenranta University of Technology (Finland), 2008; Kuopio University (Finland), 2010.

- REFERENCES AND CITATIONS
  - Citations: The number of citations by SCOPUS, 1996–February2010: **5966**. SCOPUS h-index: **23**. Hits is Google Scholar, Feb. 2010: over 30.000, highest: **6013**.