CURRICULUM VITAE
Christos Ferles

CONTACT INFORMATION

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SCIENTIFIC/RESEARCH NETWORKING

ResearchGate: https://www.researchgate.net/profile/Christos_Ferles
LinkedIn: https://za.linkedin.com/in/christos-ferles
Google Scholar: https://scholar.google.com/citations?user=WX8SJv4AAAAJ
Scopus: https://www.scopus.com/authid/detail.uri?authorId=14044829300

EDUCATION

1998–2003 ***Diploma (B.Sc. and M.Eng.) in Electrical and Computer Engineering***, School of Electrical and Computer Engineering, National Technical University of Athens

- *Specialization of Study:* Information Technology

2003–2014 ***Ph.D. in Information Technology and Computer Science***, School of Electrical and Computer Engineering, National Technical University of Athens

- *Research Field:* Hybrid Machine Learning Methodologies for Sequence Clustering and Analysis

2016–2018 ***Postdoctoral Research in Scientific Computing, Informatics and Visualization***, Faculty of Science, University of Cape Town

- *Research Field:* Algorithm Development for Glyco Gene Classification and Biomarker Discovery in Cancer

LANGUAGES

Greek: Mother tongue
English: ***Certificate of Proficiency in English (CPE)***, University of Cambridge

PROGRAMMING SKILLS

Python, Pytorch, Java, Processing, C++, Arduino, C, MPI, Matlab, XML, HTML, x86 Assembly, Fortran, Visual Basic, Pascal

RESEARCH INTERESTS

Machine Learning, Neural Networks, Artificial Intelligence, Deep Learning, Computational Intelligence, Unsupervised Learning, Backpropagation, Clustering Algorithms, (Visual) Pattern Recognition, High-Dimensional Data Analysis, Data Visualization, Dimensionality Reduction, Spatio-Temporal Modeling, Convolutional Neural Networks, (Denoising) Autoencoders, Self-Organizing Maps, Hidden Markov Models, Modeling and Analysis of Non-Numerical/Symbolic Sequences, Applied Artificial Intelligence, Bioinformatics,

Computational Biology, Gene Expression Analysis, Cancer Research, Early Detection of Cancer

ACADEMIC-TEACHING EXPERTISE

2002–2003 ***School of Electrical and Computer Engineering***, National Technical University of Athens.

2004–2010 ***Neural Networks and Intelligent Systems (9th semester)***, School of Electrical and Computer Engineering, National Technical University of Athens.

2003–2014 ***Scientific Researcher-Staff at the Intelligent Systems Laboratory***, School of Electrical and Computer Engineering, National Technical University of Athens.

2006 ***Reviewer*** for the 16th International Conference on Artificial Neural Networks (ICANN '06).

2008–2009 ***School of Computer Science***, Hellenic Open University.

2009–2010 ***Public Institute of Vocational Education and Training***, Ministry of National Education and Religious Affairs.

2009 ***Ranked 9th in the Electrical Engineer Educator National Evaluation Index***, Supreme Council for Civil Personnel Selection (ASEP).

2012–2015 ***Head of the Electrical Engineering Laboratory***, Vocational Lyceum of Karpathos, Directorate for Secondary Education, Ministry of National Education and Religious Affairs.

2013 ***Reviewer*** for the 25th IEEE International Conference on Tools with Artificial Intelligence (ICTAI '13).

2013–2014 ***Certificate of Pedagogic Utilization of Information and Communications Technologies and of Web 2.0 Tools in Teaching and Education***, Directorate for Secondary Education, Panhellenic School Network, University of the Aegean.

2014–2015 ***"Hydrobots" Robotics Educational Program Coordinator for the Vocational Lyceum of Karpathos***, Eugenides Foundation.

2016–2018 ***Postdoctoral Research Fellow at the Scientific Computing Research Unit and the Department of Chemistry***, Faculty of Science, University of Cape Town.

2021–present ***Department of Electrical and Electronics Engineering***, Faculty of Engineering, University of West Attica.

RESEARCH DISTINCTIONS

2011 ***Thomaidio Conference Paper Award for "Scaled on-line unsupervised learning algorithm for a SOM-HMM hybrid"***, General Directorate of Administration Support and Studies, National Technical University of Athens

2013 ***Thomaidio Journal Article Award for "Self-Organizing Hidden Markov Model Map (SOHMMM)"***, General Directorate of Administration Support and Studies, National Technical University of Athens

PROFESSIONAL EXPERTISE

2002 ***Research and Development Department***, Construction Directorate, Athens Water Supply and Sewerage Company (EYDAP).

2004–2005 "***Dedalos - Teaching English as a second language to deaf people, whose first language is the sign language, via e-learning tools***," Leonardo da Vinci Program.

2006–2007 "***Pythagoras - Supporting university research teams***," Special Research Account, National Technical University of Athens.

2006–2008 "***Optical recognition of handwritten mathematical symbols***," Greek Research and Technology Network.

2010 ***71st Signal Company***, 71st Airborne Brigade, Hellenic National Defense General Staff.

2012–2015 ***Vocational Lyceum of Karpathos***, Directorate for Secondary Education, Ministry of National Education and Religious Affairs.

2016–2018 "***A proof-of-principle study of the application of a glycoenzyme gene biomarker in the blood and tissue samples of patients with breast cancer, in the South African population***," University of Cape Town.

2018–2021 ***7th Vocational Lyceum of Athens (2018-2021) and 3rd Vocational Lyceum of Nea Filadelfia (2018-2019)***, Directorate for Secondary Education, Ministry of National Education and Religious Affairs.

2020–2021 "***Self-Organizing Convolutional Maps***," Special Account for Research Grants, University of West Attica.

SCIENTIFIC-PROFESSIONAL SOCIETIES

2004–present Member of the Hellenic Association of Mechanical and Electrical Engineers

2004–present Member of the Technical Chamber of Greece (TEE)

SCIENTIFIC PUBLICATIONS

Book Chapter

- C. Ferles, W. S. Beaufort and V**. Ferle, "Self-Organizing Hidden Markov Model Map (SOHMMM): biological sequence clustering and cluster visualization," (invited chapter),** *Hidden Markov Models: Methods and Protocols*, Methods in Molecular Biology, Springer Protocols, Humana Press, New York, pp. 83-101, 2017.

Peer-Reviewed Journals

- C. Ferles, Y. Papanikolaou, S. P. Savaidis, and S. A. Mitilineos, "**Deep Self-Organizing Map of Convolutional Layers for Clustering and Visualizing Image Data**," *Machine Learning and Knowledge Extraction*, vol. 3, pp. 879-899, Nov 2021.

- C. Ferles, Y. Papanikolaou, and K. J. Naidoo, "**Denoising Autoencoder Self-Organizing Map (DASOM)**," *Neural Networks*, vol. 105, pp. 112-131, Sep. 2018.

- C. Ferles and A. Stafylopatis, "**Cluster visualization and nonlinear projection techniques for biological sequences**," *Neural Network World*, vol. 26, pp. 289-303, May. 2016.
- C. Ferles and A. Stafylopatis, "**Self-Organizing Hidden Markov Model Map (SOHMMM)**," *Neural Networks*, vol. 48, pp. 133-147, Dec. 2013.
- C. Ferles, G. Siolas, and A. Stafylopatis, "**Scaled self-organizing map - hidden Markov model architecture for biological sequence clustering**," *Applied Artificial Intelligence*, vol. 27, pp. 461-495, Jul. 2013.
- M. Pertselakis, C. Ferles, K. Tsiolis, and A. Stafylopatis, "**Wireless distributed implementation of a fuzzy neural classification system**," *International Journal on Artificial Intelligence Tools*, vol. 14, pp. 661-682, Aug. 2005.

International Conferences

- C. Ferles, Y. Papanikolaou, S. P. Savaidis, and S. A. Mitilineos, "**Deep Learning Self-Organizing Map of Convolutional Layers**," in *7th International Conference on Advances in Computer Science and Information Technology*, 2021, pp. 25-32.
- C. Ferles, G. Siolas, and A. Stafylopatis, "**Scaled on-line unsupervised learning algorithm for a SOM-HMM hybrid**," in *26th International Symposium on Computer and Information Sciences*, 2011, pp. 533-537.
- C. Ferles and A. Stafylopatis, "**A hybrid self-organizing model for sequence analysis**," in *20th IEEE International Conference on Tools with Artificial Intelligence*, 2008, pp. 105-112.
- C. Ferles and A. Stafylopatis, "**Sequence clustering with the self-organizing hidden Markov model map**," in *8th IEEE International Conference on Bioinformatics and Bioengineering*, 2008, pp. 1-7.

Other Publications

- C. Ferles, "**Hybrid probabilistic unsupervised learning network for generic and biological sequence analysis**," *Ph.D. Thesis*, School of Electrical and Computer Engineering, National Technical University of Athens, 2014.
- K. Tsiolis and C. Ferles, "**Wireless distributed implementation of a fuzzy neural classification system**," *Diploma Thesis*, School of Electrical and Computer Engineering, National Technical University of Athens, 2003.