Konstantinos P. Ferentinos

Address: Dept. of Agricultural Engineering
Institute of Soil & Water Resources
Hellenic Agricultural Organization "Dimitra" (ELGO-DIMITRA)
61 Dimokratias Av., Athens 13561, Greece

Email: k.ferentinos@elgo.gr
Web: kpf3.github.io

Education

PhD, Cornell University, Ithaca, NY, USA **1999 – 2002**
Major: Dept. of Biological & Environmental Engineering (advisor: Prof. L.D. Albright)
Minor: Dept. of Computer Science
Topics: Hydroponics, Artificial Intelligence, Neural Networks, Genetic Algorithms

Master of Science (MS), Cornell University, Ithaca, NY, USA **1997 – 1999**
Major: Dept. of Agricultural & Biological Engineering
Minor: Agricultural Engineering
Topics: Controlled Environment Agriculture, Hydroponics, Artificial Intelligence

BSc/MSc (5-year degree), Agricultural University of Athens, Athens, Greece **1992 – 1997**
Major: Dept. of Agricultural Engineering
Minor: Sector of Agricultural Constructions & Machinery
Topics: Automations in Agriculture, Controlled Environment Agriculture

Research Interests

Information systems in biosystems engineering artificial intelligence, optimization, machine learning, wireless sensor networks, controlled environment agriculture.

Research / Academic Positions

Research Director January 2025 - present
Dept. of Agricultural Engineering
Institute of Soil & Water Resources
Hellenic Agricultural Organization "Dimitra", Athens, Greece

Associate Editor February 2021 - present
Biosystems Engineering (Elsevier)

Senior Researcher August 2020 – December 2024
Dept. of Agricultural Engineering
Institute of Soil & Water Resources
Hellenic Agricultural Organization "Dimitra", Athens, Greece

Researcher (Grade C) December 2016 - July 2020
Dept. of Agricultural Engineering
Institute of Soil & Water Resources
Hellenic Agricultural Organization "Dimitra", Athens, Greece

Adjunct Assoc. Professor February 2020 - August 2020
Lab. of Informatics
Dept. of Agricultural Economics and Development

Agricultural University of Athens, Athens, Greece

Research Associate February 2014 - October 2015
Dept. of Mathematics
University of Athens, Athens, Greece

Research Associate September 2013 - August 2015
Dept. of Agricultural Science
University of Thessaly, Volos, Greece

Research Associate January 2011 - August 2013
Lab. of Informatics
Agricultural University of Athens, Athens, Greece

Adjunct Assistant Professor October 2010 - August 2013
Dept. of Informatics in Administration & Economics
Dept. of Informatics and Telecommunication Technology
Technological Institute of the Ionian Islands, Lefkada, Greece

Adjunct Lecturer October 2008 - February 2010
Lab. of Informatics
Agricultural University of Athens, Athens, Greece

Adjunct Lecturer February 2005 - August 2011
Dept. of Mathematics & Spring 2017 semester
University of Athens, Athens, Greece

Postdoctoral Researcher January 2005 - April 2007
Lab. of Informatics
Agricultural University of Athens, Athens, Greece

Postdoctoral Researcher August 2003 - June 2004
Dept. of Biological & Environmental Engineering
Cornell University, Ithaca, NY, USA

Publications

	SCI	Scopus	Google scholar
Citations	2200	3500	5250
h-index	17	20	26

Refereed Journal Papers

[J.32] Argyriou, A.V., N. Tektonidis, E. Alevizos, **K.P. Ferentinos**, N.N. Kourgialas, M.M. Mathioudakis. 2024. Precision farming multimodal technologies using optical sensors for the detection of Citrus tristeza virus endemics. ***Sustainability***, vol. 16, 5748. https://doi.org/10.3390/su16135748.

[J.31] Azimonti, G., P.C. Adell, E. Clementi, **K.P. Ferentinos**, C.G. Figueroa, M. Grella, M. Luini, P. Marucco, E. Mozzanini, M. Resecco, and L. Tosti. 2024. PPP exposure models for 3-D orchards considering spraying technologies in Southern Europe. ***EFSA Supporting Publications***, vol. 21(1), p.8565E.

[J.30] Pristouris K, H. Nakos, Y. Stavrakas, K.I. Kotsopoulos, T. Alexandridis, M.S. Barda, **K.P. Ferentinos**. 2021. An integrated system for urban parks touring and management. ***Urban Science***, vol. 5(4), 91.

[J.29] **Ferentinos, K.P.**, Y. Stavrakas, H. Nakos, K. Pristouris, M.S. Barda. 2020. Initial design and features of an augmented reality system for urban park touring and management. ***International Journal of Computer Theory and Engineering***, vol. 12(5), pp. 106-112.

[J.28] Cass, A., G.P. Petropoulos, **K.P. Ferentinos**, A. Pavlides, P.K. Srivastava. 2019. Exploring the synergy between Landsat and ASAR towards thematic mapping accuracy of optical EO data. ***Applied Geomatics***, vol. 11(3), pp. 277-288.

[J.27] Amos, C., G.P. Petropoulos, **K.P. Ferentinos**. 2019. Determining the use of Sentinel-2A MSI for wildfire burning and severity detection. ***International Journal of Remote Sensing***, vol. 40(3), pp. 905-930.

[J.26] Brown, A.R., G.P. Petropoulos, **K.P. Ferentinos**. 2018. Appraisal of the Sentinel-1 & 2 use in a large-scale wildfire assessment: A case study from Portugal's fires of 2017. ***Applied Geography***, vol. 100, pp. 78-89.

[J.25] Petropoulos, G.P., P.K. Srivastava, **K.P. Ferentinos**, D. Hristopoulos. 2020. Evaluating the capabilities of optical/TIR imaging sensing systems for quantifying soil water content. ***Geocarto International***, vol. 35(5), pp. 494-511.

[J.24] Colson, D., G.P. Petropoulos, **K.P. Ferentinos**. 2018. Exploring the potential of Sentinels-1 & 2 of the Copernicus mission in support of rapid and cost-effective wildfire assessment. International ***Journal of Applied Earth Observations and Geoinformation***, vol. 73, pp. 262-276.

[J.23] Whyte, A., **K.P. Ferentinos**, G.P. Petropoulos. 2018. A new synergistic approach for monitoring wetlands using Sentinels -1 and 2 data with object-based machine learning algorithms. ***Environmental Modelling and Software***, vol. 104, pp. 40-54.

[J.22] **Ferentinos, K.P.** 2018. Deep learning models for plant disease detection and diagnosis. ***Computers and Electronics in Agriculture***, vol. 145, pp. 311-318.

[J.21] Elvanidi, A., N. Katsoulas, **K.P. Ferentinos**, T. Bartzanas, C. Kittas. 2018. Hyperspectral machine vision as a tool for water stress severity assessment in soilless tomato crop. ***Biosystems Engineering***, vol. 165, pp. 25-35.

[J.20] Li, L., J. Li, H. Wang, T. Georgieva, **K.P. Ferentinos**, K.G. Arvanitis, N.A. Sigrimis. 2018 Sustainable energy management of solar greenhouses using open weather data on MACQU platform. ***International Journal of Agricultural & Biological Engineering***, vol. 11(1), pp. 74-82.

[J.19] Li, J., L. Li, H. Wang, **K.P. Ferentinos**, M. Li, N. Sigrimis. 2017. Proactive energy management of solar greenhouses with risk assessment to enhance smart specialisation in China. ***Biosystems Engineering***, vol. 155, pp. 10-22.

[J.18] Elvanidi, A., N. Katsoulas, T. Bartzanas, **K.P. Ferentinos**, C. Kittas. 2017. Crop water status assessment in controlled environment using crop reflectance and temperature measurements. ***Precision Agriculture***, vol. 18, doi:10.1007/s11119-016-9492-3.

[J.17] **Ferentinos, K.P.**, N. Katsoulas, A. Tzounis, T. Bartzanas, C. Kittas. 2017. Wireless sensor networks for greenhouse climate and plant condition assessment. ***Biosystems Engineering***, vol. 153, pp. 70-81.

[J.16] Katsoulas, N, A. Elvanidi, **K.P. Ferentinos**, M. Kacira, T. Bartzanas, C. Kittas. 2016. Crop reflectance monitoring as a tool for water stress detection in greenhouses: A review. ***Biosystems Engineering***, vol. 151, pp. 374-398.

[J.15] Katsoulas, N., K. Peponakis, **K.P. Ferentinos**, C. Kittas. 2015. Calibration of a growth model for tomato seedlings (TOMSEED) based on heuristic optimisation. ***Biosystems Engineering***, vol. 140, pp. 34-47.

[J.14] **Ferentinos, K.P.**, C.P. Yialouris, P. Blouchos, G. Moschopoulou, S. Kintzios. 2013. Pesticide residue screening using a novel artificial neural network combined with a bioelectric cellular biosensor. ***BioMed Research International***, vol. 2013, art. no. 813519.

[J.13] **Ferentinos, K.P.**, and T.A. Tsiligiridis. 2010. A memetic algorithm for optimal dynamic design of wireless sensor networks. ***Computer Communications***, vol. 33(2), pp. 250-258.

[J.12] Glezakos, T.J., T.A. Tsiligiridis, L.S. Iliadis, C.P. Yialouris, F.P. Maris, **K.P. Ferentinos**. 2009. Feature extraction for time series data: an artificial neural network evolutionary training model for the management of mountainous watersheds. ***Neurocomputing***, vol. 73, pp. 49-59.

[J.11] Maliappis, M.T., **K.P. Ferentinos,** H.C. Passam, A.B. Sideridis. 2008. GIMS: a web-based greenhouse intelligent management system. ***World Journal of Agricultural Sciences***, vol. 4(5), pp. 640-647.

[J.10] **Ferentinos, K.P.**, and T.A. Tsiligiridis. 2007. Adaptive design optimization of wireless sensor networks using genetic algorithms. ***Computer Networks***, vol. 51(4), pp. 1031-1051.

[J.9] **Ferentinos, K.P.** 2005. Biological engineering applications of feedforward neural networks designed and parameterized by genetic algorithms. ***Neural Networks***, vol. 18(7), pp. 934-950.

[J.8] **Ferentinos, K.P.** and L.D. Albright. 2005. Optimal design of plant lighting system by genetic algorithms. ***Engineering Applications of Artificial Intelligence***, vol. 18(4), pp. 473-484.

[J.7] **Ferentinos, K.P.** and L.D. Albright. 2003. Fault detection and diagnosis in deep-trough hydroponics using intelligent computational tools. ***Biosystems Engineering***, vol. 84(1), pp. 13-30.

[J.6] **Ferentinos, K.P.,** L.D. Albright, B. Selman. 2003. Neural network-based detection of mechanical, sensor and biological faults in deep-trough hydroponics. ***Computers and Electronics in Agriculture***, special issue on Artificial Intelligence in Agriculture, vol. 40(1-3), pp. 65-85.

[J.5] **Ferentinos, K.P.** and L.D. Albright. 2002. Predictive neural network modeling of pH and electrical conductivity in deep-trough hydroponics. ***Transactions of the ASAE***, vol. 45(6), pp. 2007-2015.

[J.4] **Ferentinos, K.P.,** K.G. Arvanitis, N. Sigrimis. 2002. Heuristic optimization methods for motion planning of autonomous agricultural vehicles. ***Journal of Global Optimization***, vol. 23, pp. 155-170.

[J.3] Sigrimis, N., K.G. Arvanitis, G.D. Pasgianos, **K.P. Ferentinos.** 2002. Computer integrated management and intelligent control of greenhouses. ***Environment Control in Biology***, vol. 40(1), pp. 39-53 (invited paper).

[J.2] Sigrimis, N., K.G. Arvanitis, G.D. Pasgianos, **K. Ferentinos.** 2001. Hydroponics water management using adaptive scheduling with an on-line optimiser. ***Computers and Electronics in Agriculture***, vol. 31(1), pp. 31-46.

[J.1] **Ferentinos, K.P.,** L.D. Albright, D.V. Ramani. 2000. Optimal light integral and carbon dioxide concentration combinations for lettuce in ventilated greenhouses. ***Journal of Agricultural Engineering Research***, vol. 77(3), pp. 309-315.

Refereed International Conference Papers

[Conference acceptance rates included where available]

[C.52] Chueca, P., J. Mata, M. Grella, M. Resecco, **K.P. Ferentinos,** G. Azimonti, and C. Garcera. 2023. Spray technologies in 3D crops in Southern Europe: a state-of-the-art survey. *Suprofruit - 16th Workshop on Spray Application and Precision Technology in Fruit Growing*, September 19-21, Montpellier. France.

[C.51] **Ferentinos, K.P.,** and M.S. Barda. 2021. A deep learning plants identification model for augmented reality touring in urban parks. *5th International Conference of the International Commission of Agricultural and Biosystems Engineering (CIGR)*, May 11-14, Québec City, Canada.

[C.50] **Ferentinos, K.P.**, Y. Stavrakas, H. Nakos, K. Pristouris, M.S. Barda. 2019. Initial design and features of an augmented reality system for urban park touring and management. *12th International Conference on Computer Science and Information Technology (ICCSIT 2019)*, Dec. 18-20, Barcelona, Spain.

[C.49] **Ferentinos, K.P.**, M. Barda, D. Damer. 2019. An image-based deep learning model for cannabis diseases, nutrient deficiencies and pests identification. In: Moura Oliveira P., Novais P., Reis L. (eds) Progress in Artificial Intelligence. EPIA 2019. ***Lecture Notes in Computer Science***, vol. 11804, Springer.

[C.48] Katsoulas, N., A. Elvanidi, T. Bartzanas, **K.P. Ferentinos**, C. Kittas. 2016. Sensing of reflectance for water stress detection in greenhouses. *ISHS Symposium "Sensing Plant Water Status - Methods and Applications in Horticultural Science"*, October 5-7, Berlin, Germany.

[C.47] Elvanidi, A., N. Katsoulas, T. Bartzanas, **K.P. Ferentinos**, C. Kittas. 2016. Assessment of crop water status by means of crop reflectance. *3rd International Symposium on Organic Greenhouse Horticulture (OGH 2016)*, April 11-14, Izmir, Turkey.

[C.46] Katsoulas, N., **K.P. Ferentinos**, A. Tzounis, T. Bartzanas, C. Kittas. 2015. Spatially distributed greenhouse climate control based on wireless sensor network measurements. ***Acta Horticulturae***, vol. 1154. (*5th Symposium on Applications of Modelling as an Innovative Technology in the Horticultural Supply Chain (Model-IT)*, October 11-14, Wageningen, The Netherlands).

[C.45] Katsoulas, N., **K.P. Ferentinos**, A. Tzounis, T. Bartzanas, C. Kittas. 2015. Operation reliability of wireless sensor networks in greenhouse conditions. ***Acta Horticulturae***, vol. 1170, pp. 867-874 (2017). (*International Symposium on New Technologies and Management in Greenhouses (GreenSys 2015)*, July 19-23, Evora, Portugal).

[C.44] Kittas, C., A. Elvanidi, **K.P. Ferentinos**, T. Bartzanas, N. Katsoulas. 2015. Crop temperature measurements for crop water status identification in greenhouses. *International Symposium on New Technologies and Management in Greenhouses (GreenSys 2015)*, July 19-23, Evora, Portugal.

[C.43] Bartzanas, T., N. Katsoulas, A. Elvanidi, **K.P. Ferentinos**, C. Kittas. 2015. Remote sensing for crop water stress detection in greenhouses. *10th European Conference on Precision Agriculture*, July 12-16, Volcani Center, Israel.

[C.42] Katsoulas, N., A. Elvanidi, **K.P. Ferentinos**, T. Bartzanas, C. Kittas. 2014. Calibration of a hyperspectral imaging system for greenhouse plant water stress detection. ***Acta Horticulturae***, vol. 1142, pp. 119-126. (*6th Balkan Symposium on Vegetables and Potatoes*, September 29 – October 2, Zagreb, Croatia).

[C.41] Katsoulas, N., A. Elvanidi, **K.P. Ferentinos**, T. Bartzanas, C. Kittas. 2014. A hyperspectral imaging system for plant stress detection: calibration and preliminary results. *25th International Scientific – Experts Congress on Agriculture and Food Industry*, September 25-27, Cesme-Izmir, Turkey.

[C.40] **Ferentinos, K.P.**, N. Katsoulas, A. Tzounis, C. Kittas, T. Bartzanas. 2015. A climate control methodology based on wireless sensor networks in greenhouses. ***Acta Horticulturae***, vol. 1107, pp. 75-82. (*29th International Horticultural Congress (IHC2014)*, August 17-22, Brisbane, Australia. DOI: 10.17660/ActaHortic.2015.1107.9)

[C.39] Kittas, C., A. Elvanidi, N. Katsoulas, **K.P. Ferentinos**,T. Bartzanas. 2016. Reflectance indices for the detection of water stress in greenhouse tomato (*Solanum lycopersicum*). ***Acta Horticulturae***, vol. 1112, pp. 63-70 (*29th International Horticultural Congress (IHC2014)*, August 17-22, 2014, Brisbane, Australia).

[C.38] **Ferentinos, K.P.**, C.P. Yialouris, P. Blouchos, G. Moschopoulou, V. Tsourou, K. Kintzios. 2012. The use of artificial neural networks as a component of a cell-based biosensor device for the detection of pesticides. ***Procedia Engineering*** *(Proceedings Eurosensors XXVI)*, vol. 47, pp. 989-992.

[C.37] Maliappis, M.T. and **K.P. Ferentinos**. 2008. Evaluation methodology of a web-based greenhouse intelligent management system. *4th International Conference on Information Technology & Innovations in Bio and Earth Sciences*, September 18-20, Athens, Greece.

[C.36] **Ferentinos, K.P.**, N. Trigoni, S. Nittel. 2008. Impact of drifter deployment on the quality of ocean sensing. *Advances in Geosensor Networks*, ***Lecture Notes in Computer Science***, vol. 4540, pp. 9-24, Springer.

[C.35] **Ferentinos, K.P.**, T.A. Tsiligiridis. 2007. A memetic algorithm for dynamic design of wireless sensor networks. *IEEE Congress on Evolutionary Computation (CEC'07), special session on Memetic Algorithms*, September 25-28, Singapore. ***(Special session acceptance rate: 25%)***

[C.34] Glezakos, T.J., T. Tsiligiridis, L. Iliadis, C.P. Yialouris, F. Maris, **K.P. Ferentinos**. 2007. Feature extraction for time series data: an artificial neural network evolutionary training model for the management of mountainous watersheds. *10th Int'l Conf. on Engineering Applications of Neural Networks*, August 29-31, Thessaloniki, Greece.

[C.33] Nittel, S., N. Trigoni, **K.P. Ferentinos**, F. Neville, A. Nural, N. Pettigrew. 2007. A drift-tolerant model for data management in ocean sensor networks. *Proceedings of the 6th ACM International Workshop on Data Engineering for Wireless and Mobile Access (ACM MobiDE 2007)*, June 10, Beijing, China, pp. 49-58. ***(Conference acceptance rate: 32%)***

[C.32] Kaloudis, S., T. Glezakos, **K.P. Ferentinos**, T.A. Tsiligiridis, C.P. Yialouris. 2006. Feedforward neural network modeling of fir taper in natural forests of Greece. *International Conference on Sustainable Management and Development of Mountainous and Island Areas*, September 29 – October 1, Naxos, Greece, pp. 166-172.

[C.31] Pontikakos, C., **K.P. Ferentinos**, T.A. Tsiligiridis, A.B. Sideridis. 2006. Natural ventilation efficiency in a twin-span greenhouse using 3D computational fluid dynamics. *3rd International Conference on Information and Communication Technologies in Agriculture (HAICTA 2006)*, September 20-23, Volos, Greece.

[C.30] **Ferentinos, K.P.**, T.A. Tsiligiridis. 2006. Energy-saving design adaptation of wireless sensor networks with solar rechargeable batteries. *8th International Conference on Precision Agriculture*, July 23-26, Minneapolis, MN, U.S.A.

[C.29] Maliappis, M.T., **K.P. Ferentinos**, H.C. Passam, A.B. Sideridis, T.A. Tsiligiridis. 2006. A web-based intelligent decision support system for low-technology greenhouses. *4th World Congress on Computers in Agriculture*, July 24-26, Orlando, Florida, U.S.A.

[C.28] **Ferentinos, K.P.**, T.A. Tsiligiridis. 2006. Heuristic dynamic clustering in wireless sensor networks for environmental sensing. *15th IST Mobile & Wireless Communications Summit*, June 4-8, Myconos, Greece.

[C.27] **Ferentinos, K.P.,** T.A. Tsiligiridis. 2005. Heuristic design and energy conservation of wireless sensor networks for precision agriculture. *International Congress on Information Technologies in Agriculture, Food and Environment (ITAFE'05)*, 12-14 October, Adana, Turkey.

[C.26] Pontikakos, C., **K.P. Ferentinos,** T.A. Tsiligiridis. 2005. Web-based estimation model of natural ventilation efficiency in greenhouses using 3D computational fluid dynamics. *International Congress on Information Technologies in Agriculture, Food and Environment (ITAFE'05)*, 12-14 October, Adana, Turkey.

[C.25] **Ferentinos, K.P.,** T.A. Tsiligiridis. 2005. Evolutionary energy management and design of wireless sensor networks. *2nd IEEE Conference on Sensor and Ad Hoc Communications and Networks (IEEE SECON 2005)*, 26-29 September, Santa Clara, CA, USA. ***(Conference acceptance rate: 27%)***

[C.24] **Ferentinos, K.P.,** T.A. Tsiligiridis, K.G. Arvanitis. 2005. Energy optimization of wireless sensor networks for environmental measurements. *Proceedings of the IEEE International Conference on Computational Intelligence for Measurement Systems and Applications (IEEE CIMSA'05)*, 20-22 July, Giardini-Naxos, Sicily, Italy, pp. 250-255. ***(Conference acceptance rate: 60%)***

[C.23] **Ferentinos, K.P.**, K.G. Arvanitis, D. Lambrou, A. Anastasiou, N. Sigrimis. 2004. A multi-agent system with SMS capabilities for integrated production in greenhouse hydroponics. *2004 CIGR International Conference*, 11-14 October, Beijing, China.

[C.22] Anastasiou, A., **K.P. Ferentinos**, K.G. Arvanitis, N. Sigrimis. 2004. A DSS tool as a virtual measurement system for closed hydroponic system management. *2004 CIGR International Conference*, 11-14 October, Beijing, China.

[C.21] **Ferentinos, K.P.**, K.G. Arvanitis, I.Z. Stellas, N. Sigrimis. 2004. Biologically inspired algorithms for PID tuning in greenhouse environment control. *AgEng2004 International Conference, Workshop on Intelligent Technology for Bioproduction Systems*, 12-16 September, Leuven, Belgium.

[C.20] **Ferentinos, K.P.**, K.G. Arvanitis, D. Lambrou, A. Anastasiou, N. Sigrimis. 2004. A multi-agent system for integrated production in greenhouse hydroponics. ***Acta Horticulturae*, vol. 691, pp. 381-388**: *AgEng2004 International Conference, Workshop on Sustainable Greenhouse Systems (GreenSys2004)*, 12-16 September, Leuven, Belgium.

[C.19] Anastasiou, A., **K.P. Ferentinos**, K.G. Arvanitis, N. Sigrimis, D. Savvas. 2004. DSS-Hortimed for on-line management of hydroponic systems. ***Acta Horticulturae*, vol. 691, pp. 267-274**. (*AgEng2004 International Conference, Workshop on Sustainable Greenhouse Systems (GreenSys2004)*, 12-16 September, Leuven, Belgium).

[C.18] **Ferentinos, K.P.**, L.D. Albright, K.G. Arvanitis. 2004. Neural network based self-inspected plant production system. *International Congress on Mechatronics*, 7-9 July, Prague, Czech Republic.

[C.17] **Ferentinos, K.P.,** A. Anastasiou, G.D. Pasgianos, K.G. Arvanitis, N. Sigrimis. 2003. A Decision Support System as a tool to optimal water management in soilless cultures under saline conditions. ***Acta Horticulturae*, vol. 609, pp. 289-296**. (*International ISHS Symposium on Managing Greenhouse Crops in Saline Environment*, Pisa, Italy).

[C.16] **Ferentinos, K.P.,** K.G. Arvanitis, G.E. Stavroulakis. 2003. Neural Network Model of Hydroponics Constructed by a Genetic Algorithm System. *Computational Management Science Conference, Mini Workshop in Agricultural, Biological and Environmental Science Modelling*, Chania, Crete, Greece, 27-30 May.

[C.15] Sigrimis, N., K.G. Arvanitis, **K.P. Ferentinos.** 2002. MACQU: An Open SCADA System for Intelligent Management and Control of Greenhouses. *XVth CIGR/ASAE World Congress, Paper No. 023033*, Chicago, USA.

[C.14] Sigrimis, N., K.G. Arvanitis, **K.P. Ferentinos,** A. Anastasiou. 2002. An Intelligent Noninteracting Technique for Climate Control of Greenhouses. *15th IFAC World Congress*, Barcelona, Spain, 21-26 July.

[C.13] **Ferentinos, K.P.,** K.G. Arvanitis, G.D. Pasgianos, N.A. Sigrimis. 2001. A Comparison of Intelligent Computational Algorithms for Path Planning. *5th International Conference on Hellenic European Research on Computer Mathematics and its Applications (HERCMA 2001)*, Athens, Greece, 20-22 September.

[C.12] Sigrimis, N., **K.P. Ferentinos,** K.G. Arvanitis, A. Anastasiou. 2001. A Comparison of Optimal Greenhouse Heating Setpoint Generation Algorithms for Energy Conservation. *Intelligent Control for Agricultural Applications 2001: A Proceedings Volume from the 2nd IFAC/CIGR Workshop*, Bali, Indonesia, 22-24 August, pp. 61-66.

[C.11] **Ferentinos, K.P.,** L.D. Albright, B. Selman. 2001. Neural Network Based Fault Detection in Hydroponic Systems. *Preprints of the 4th IFAC International Workshop on Artificial Intelligence in Agriculture (AIA'2001)*, Budapest, Hungary, 6-8 June, pp. 37-42.

[C.10] Sigrimis, N., K.G. Arvanitis, **K.P. Ferentinos,** A. Anastasiou, G. Pasgianos. 2000. Adaptive Scheduling for Hydroponics Water Management. *Preprints of the XIV Memorial CIGR World Congress*, Tsukuba, Japan, November 28 – December 1, CD-ROM Volume, pp. 1744-1749.

[C.9] Sigrimis, N., K.G. Arvanitis, G. Pasgianos, A. Anastasiou, **K.P. Ferentinos.** 2000. Supervisory Control Tools for a Virtual Greenhouse. *Preprints of the XIV Memorial CIGR World Congress*, Tsukuba, Japan, November 28 – December 1, CD-ROM Volume, pp. 990-995.

[C.8] **Ferentinos, K.P.**, K.G. Arvanitis, K. Kyriakopoulos, N. Sigrimis. 2000. Heuristic Motion Planning for Autonomous Agricultural Vehicles. *Proceedings of the 2nd IFAC/CIGR International Workshop on Bio-Robotics, Information Technology and Intelligent Control for Bioproduction Systems (Bio-Robotics II)*, Sakai, Osaka, Japan, 25-26 November, pp. 322-327.

[C.7] Arvanitis, K.G., N.A. Sigrimis, K.J. Kyriakopoulos, **K.P. Ferentinos.** 2000. A Nonlinear Restricted State Feedback Control Strategy for Over-Actuated Robot Manipulators. *Proceedings of the 2nd IFAC/CIGR International Workshop on Bio-Robotics, Information Technology and Intelligent Control for Bioproduction Systems (Bio-Robotics II)*, Sakai, Osaka, Japan, 25-26 November, pp. 101-106.

[C.6] Sigrimis, N., K.G. Arvanitis, G. Pasgianos, A. Anastasiou, **K.P. Ferentinos.** 2000. New Ways to Production Management and Supervisory Control: A Virtual Greenhouse. *Preprints of the IFAC Symposium on Manufacturing, Modeling, Management and Control (MIM 2000)*, vol. 1, Patras, Greece, 12-14 July, pp. 529-536.

[C.5] **Ferentinos, K.P.,** L.D. Albright, N.R. Scott. 2000. Modeling pH and Electrical Conductivity in Hydroponics using Artificial Neural Networks. *Preprints of the IFAC International Conference on Modelling and Control in Agriculture, Horticulture and Post-Harvest Processing (Agricontrol 2000)*, Wageningen, the Netherlands, 10-12 July, pp. 364-369.

[C.4] Sigrimis, N., K.G. Arvanitis, G. Pasgianos, A. Anastasiou, **K.P. Ferentinos,** 2000. New Ways on Supervisory Control: a Virtual Greenhouse: to train, to control and to manage. *Preprints of the IFAC International Conference on Modelling and Control in Agriculture, Horticulture and Post-Harvest Processing (Agricontrol 2000)*, Wageningen, the Netherlands, 10-12 July, pp. 212-217.

[C.3] Sigrimis, N., K.G. Arvanitis, G. Pasgianos, A. Anastasiou, **K.P. Ferentinos.** 2000. A Virtual Greenhouse for Training, Control and Management. *EurAgEng Conference on Agricultrural Engineering (AgEng2000)*, Warwick, UK, 2-7 July, Paper 00-AE-022, Book of Abstracts, pp. 57-58.

[C.2] Rerras, N., A. Anastasiou, **K. Ferentinos,** N. Sigrimis. 1998. An Adaptive Optimizer for Process Control. In Sigrimis N. and P. Groumpos (Eds) *Proceedings of 1st IFAC Workshop on Control Applications and Ergonomics in Agriculture*. Athens, Greece, June 15-17, by Pergamon, pp. 189-194.

[C.1] Sigrimis, N., A. Anastasiou, **N. Ferentinos,** N. Rerras. 1997. Field Experiments with an Intelligent Leaf Sensor. *Mathematical and Control Applications in Agriculture and Horticulture: a proceedings volume from the 3rd IFAC Workshop*, Hannover, Germany, 9/28-10/2. Edited by A. Munack and H.-J. Tantau, Pergamon, pp. 255-259.

Patents

[P.1] L.D. Albright, **K.P. Ferentinos**, I. Seginer, D.S. de Villiers & J.W. Ho., 2007. "Systems and methods for providing optimal light-CO_2 combinations for plant production", USA, **Patent No.: US 7,184,846 B2**, Feb. 27, 2007.

[P.2] L.D. Albright, **K.P. Ferentinos**, I. Seginer, D.S. de Villiers & J.W. Ho., 2009. "Methods for providing optimal light-CO_2 combinations for plant production", USA, **Patent No.: US 7,502,655 B2**, Mar. 10, 2009.

Book Chapters

[B.1] **Ferentinos, K.P.,** I.K. Kookos, K.G. Arvanitis, and N.A. Sigrimis. 2006. From Production to the User – Quality Issues for Agricultural Product Chains. ***Chapter 8.2 of the CIGR Handbook of Agricultural Engineering, Vol. VI: Information Technology***, pp. 480-500, Axel Munack (ed.), St. Joseph, Michigan, USA.

[B.2] **Ferentinos, K.P.,** K.G. Arvanitis, and N.A. Sigrimis. 2006. Communication Issues and Internet Use – Internet Use in Agriculture, Remote Service and Maintenance; E-commerce, E-business, E-consulting, E-support. ***Chapter 7.2 of the***

CIGR Handbook of Agricultural Engineering, Vol. VI: Information Technology, pp. 453-464, Axel Munack (ed.), St. Joseph, Michigan, USA.

[B.3] **Ferentinos, K.P.,** K.G. Arvanitis, H.J. Tantau, and N.A. Sigrimis. 2006. Precision Agriculture – Special Aspects of IT for Greenhouse Cultivation. ***Chapter 5.8 of the CIGR Handbook of Agricultural Engineering, Vol. 6: Information Technology***, pp. 294-312, Axel Munack (ed.), St. Joseph, Michigan, USA.

[B.4] Yialouris, C.P., and **K.P. Ferentinos**. 2017. Time-series processing for portable biosensors and mobile platforms for automated pattern recognition. Chapter in: ***Portable biosensors and Point-of-Care systems***, IET (in press).

[B.5] Piromalis, D., K.G. Arvanitis, P. Papageorgas, **K.P. Ferentinos**. 2017. Smart precision lighting for urban and landscape closed controlled horticultural environments. ***Chapter 6 in: "Urban Horticulture"***, Dilip Nandwani (ed.), Springer, Switzerland.

[B.6] Amos, C., **K.P. Ferentinos,** G.P. Petropoulos, P.K. Srivastava. 2020. Assessing the Use of Sentinel-2 in Burnt Area Cartography: Findings from a Case Study in Spain. Chapter 11 in: P.K. Srivastava (ed.), ***Techniques for Disaster Risk Management and Mitigation***, First edition, pp. 141-150, John Wiley & Sons.

[B.7] Stippa, S.R., **K.P Ferentinos**, G.P. Petropoulos. 2020. An Exploration of the Panther Mountain Crater Impact Using Spatial Data and GIS Spatial Correlation Analysis Techniques. ***Techniques for Disaster Risk Management and Mitigation***, pp.111-123, John Wiley & Sons.

Theses

[T.1] K.P. Ferentinos, 2002. *Neural Network Fault Detection and Diagnosis in Deep-Trough Hydroponic Systems*. PhD Dissertation, Cornell University Libraries, Ithaca, NY, 195 p.

[T.2] K.P. Ferentinos, 1999. *Artificial Neural Network Modeling of pH and Electrical Conductivity of Hydroponic Systems*. MS Thesis, Cornell University Libraries, Ithaca, NY, 97 p.

[T.3] K.P. Ferentinos, 1997. *Development of a 'Fog System' Model Using an Optimization Technique*, BSc/MSc Thesis, Dept. of Agricultural Engineering, Agricultural University of Athens, Greece (in Greek).

Teaching Experience

University	Position	Duration	Courses
National & Kapodistrian University of Athens Dept. of Mathematics	Adjunct Lecturer & Adjunct Assoc. Prof. *(ΠΔ 407)*	**11 semesters** (2005-2011 & Spr. 2017)	- Computer Science I (MATLAB, Python) - Computer Science II (Java) - Programming Languages (Java) - Computational Science & Technology - Computational Complexity - Design & Analysis of Algorithms
	Researcher	**3 semesters** (2014-2016)	
Agricultural Univ. of Athens Informatics Laboratory	Adjunct Lecturer *(ΠΔ 407)*	**5 semesters** (2008-2010)	- Introduction to Computer Science
	Adjunct Assoc. Professor *(ΠΔ 407)*	**1 semester** (2019-2020)	- Computer Programming & Applications (Python)
Cornell University Dept. of Bio. & Env. Eng.	Postdoctoral Researcher	**2 semesters** (2003-2004)	- Introduction to Computing (Java) - Biologically Inspired Optimization (post-graduate)
Technological Institute of the Ionian Islands - Dept. of Informatics in Administration & Economics - Dept. of Informatics and Telecommunication Tech.	Adjunct Asst. Prof.	**5 semesters** (2010-2013)	- Object-Oriented Programming (C++) - Advanced Programming (Java) - Introduction to Algorithms - Introduction to Algorithms and Programming (C) - Programming II (C++) - Introduction to Computer Science

Research Experience

A. Positions:

Research Director (2025 – present), Senior Researcher (2020 – 2024), Researcher (2016 – 2020)
Hellenic Agricultural Organization "Dimitra", Dept. of Ag. Engineering
Research areas: Smart agriculture, computational intelligence, machine learning, wireless sensor networks, GIS

2014 – 2015: Research Fellow
University of Athens, Dept. of Mathematics
Research areas: Complexity of algorithms, optimization, modelling, computational intelligence

2013 – 2015: Postdoctoral Fellow
University of Thessaly, Dept. of Agriculture
Research areas: Intelligent control, wireless sensor networks, environmental control

2002 – 2013: Research Fellow
Agricultural University of Athens, Lab. of Informatics
Research areas: Neural networks, pattern recognition, biosensors, wireless sensor networks

2003 – 2004: Postdoctoral Fellow
Cornell University, Dept. of Ag & Bio Engineering
Research areas: Computational intelligence, controlled environment agriculture

B. Projects (PI or partner leader, last 10 years):

Project PI: "VR-Park: Augmented reality system for the promotion and touring of urban parks". Funded by EU and Greek resources (Operational Programme Competitiveness, Entrepreneurship and Innovation 2014-2020 (EPAnEK)). Total budget: 761 K€ / Principal partner budget: 208 K€. Duration: 24 months (9/2018 – 9/2020).

Project PI: "WeeDetect - Intelligent system for weed identification and spraying necessity assessment through biodiversity indices". Action 2 of sub-measures 16.1-16.5 "Cooperation for environmental projects, environmental practices and actions for climate change" of regional and national scope of the Rural Development Programme (RDP) 2014-2020.Budget: 288 K€ / Principal partner budget: 103 K€. Duration: 34 months (2/2023 - 8/2025).

Partner leader: "PPP exposure models for 3D orchards considering spraying technologies in Southern Europe" EFSA call: GP/EFSA/ENCO/2020/03 - Partnering grants Budget: 183 K€ / Partner budget: 29 K€. Duration: 24 months (10/2021-10/2023).

Partner leader: "Weedetective – Smart mobile application for automatic weeds detection". Funded by EU and Greek resources (Operational Programme Competitiveness, Entrepreneurship and Innovation 2014-2020 (EPAnEK)). Total budget: 193 K€ / Partner budget: 74.4 K€. Duration: 30 months (2020 – 2023).

Partner leader: "Innovative solutions for the sustainable and environmentally friendly plant protection of Greek fruit and vegetables in the Europe of the future" (InnoPP) (project code: TAEDR-0535675). Greece 2.0 - National Recovery and Resilience Plan, Action: 'Flagship actions in interdisciplinary scientific areas of special interest for the connection to the productive fabric'. Budget: 4.9 M€ / Partner budget: 700 K€. Duration: 28 months (4/2023-10/2025).

Professional Activities

A. Reviewer / editor:

Editor or Guest editor in Journals:

- **Associate Editor:** Biosystems Engineering (Elsevier): 2021 – present.
- **Co-Editor:** "AMA, Agricultural Mechanization in Asia, Africa and Latin America", ISSN 0084-5841: 2018 – present.
- **Guest editor:** Special issue "Computational Intelligence in Agriculture and Natural Resources", "Inventions" journal (MDPI): 2019.

Reviewer for the following journals:

- *Algorithms (MDPI)* [2 reviews]
- *Applied Computational Intelligence and Soft Computing (Hindawi)*
- *Applied Engineering in Agriculture (American Society of Ag. & Bio. Engineers)* [2 reviews]
- *Applied Numerical Mathematics (Elsevier)* [2 reviews]
- *Biosystems Engineering (Elsevier)* [23 reviews]
- *Chemical Product and Process Modeling (The Berkeley Electronic Press)*
- *CIGR Ejournal (Commission Internationale du Génie Rural)*

- *Computer Networks (Elsevier)*
- *Computers and Electronics in Agriculture (Elsevier)* [14 reviews]
- *Ecological Informatics (Elsevier)*
- *Energies (MDPI)*
- *Energy and Buildings (Elsevier)*
- *Engineering Structures (Elsevier)*
- *Environmental Modelling and Software (Elsevier)*
- *Frontiers in Plant Science* [2 reviews]
- *IEEE Transactions on Evolutionary Computation (IEEE)*
- *Information Sciences (Elsevier)*
- *International Journal of Applied Earth Observation and Geoinformation (Elsevier)*
- *International Journal of Chemical Engineering (Hindawi)*
- *International Journal of Distributed Sensor Networks*
- *International Journal of Intelligent Computing and Cybernetics*
- *International Journal of Modelling, Identification and Control (Inderscience)*
- *International Journal of Remote Sensing and Remote Sensing Letters*
- *International Journal on Sensor Networks (Inderscience)*
- *Journal of AI and Data Mining*
- *Journal of Systems and Software (Elsevier)* [2 reviews]
- *Memetic Computation (Springer)*
- *Modeling, Identification and Control (DOAJ)*
- *Neural Computing & Applications (Springer)*
- *PLOS One (Public Library of Science)*
- *Polish Journal of Environmental Studies*
- *Remote Sensing (MDPI)*
- *Scientific Reports (Nature Publishing Group)*
- *Sensors (MDPI)*
- *Soft Computing (Elsevier)*
- *The Computer Journal (Oxford Journals)*
- *Transactions of the ASABE (American Society of Ag. & Bio. Engineers)* [3 reviews]
- *Wireless Personal Communications (Springer)*

Reviewer for the following conferences:

- *- 11th Annual Mediterranean Ad Hoc Networking Workshop (2012)*
- *- IEEE CCECE-2010 (23rd Canadian Conf. On Electrical & Computer Engineering)*
- *- 3rd Int'l Conf. on Geosensor Networks 2009*
- *- 4th IEEE/ACM DCOSS-2008*
- *- ICC 2007 Wireless Communications Symposium*
- *- IEEE MASS-2006*
- *- 16th IFAC World Congress 2005*
- *- Several CIGR, ASABE, EurAgEng conferences*

B. Conference Committees / Chairs:

Member of program committees:

- 19th EPIA Conference on Artificial Intelligence (EPIA2019) (Thematic track: Artificial Intelligence and IoT in Agriculture (AIoTA)), September 2019
- 4th International Conference on Geosensor Networks, July 2011
- Int'l Conference on Intelligent Networking and Collaborative Systems (INCoS 2010)
- Int'l Conference on Intelligent Networking and Collaborative Systems (INCoS 2009)
- 3rd International Conference on Geosensor Networks, July 2009

- 4th IEEE/ACM International Conference on Distributed Computing in Sensor Systems (DCOSS), June 2008

Member of organizing committees:

- AgEng2024, 1-4 July 2024, Athens, Greece
- 10th Greek Conference of "Hellenic Society of Agricultural Engineers" (2017)

Chair:

- Chair: Session "*Neural Networks*" at 4th International Conference on Artificial Intelligence in Agriculture", Budapest, Hungary (June 2001)
- Chair, AgEng2024 conference, 1-4 July 2024, Athens, Greece
- Co-chair: Session "*Engineering Technology*" at 8th International Conference on Precision Agriculture", Minneapolis, Minnesota, USA (July 2006)
- Co-chair: Session "*Innovation and New Technologies*" at 10th Greek Conference of "Hellenic Society of Agricultural Engineers" (September 2017).