Curriculum Vitae

Xanthoula Eirini Pantazi

Associate Professor

Laboratory of Agricultural Engineering

Faculty of Agriculture

Aristotle University of Thessaloniki

Greece

1. INTRODUCTION-SHORT CV

GOOGLE SCHOLAR:

https://scholar.google.gr/citations?user=fF-uD5QAAAAJ&hl=en

ORCID:

http://orcid.org/0000-0002-8039-1077

LinkedIn:

https://www.linkedin.com/in/xanthoula-eirini-pantazi-0735a954/

Work Adress: Laboratory of Agricultural Engineering, Hydraulics, Department of Soil science and Agricultural engineering, Faculty of Agriculture, Aristotle University of Thessaloniki, Greece, 541 24

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Xanthoula Eirini Pantazi, PhD is Associate Professor at Faculty of Agriculture, Aristotle University of Thessaloniki, Greece. She holds a PhD in Biosystems Engineering and is an expert in bio-inspired computational systems and data mining. Her research interests include precision farming, biotic vs abiotic crops stressors detection, DSS, IoT, big data, robotics, sensor fusion, machine learning, deep learning and non-destructive sensing techniques of bio-material and crop protection. She has been involved in the proposal preparation, management and research part of several EU projects concerning Decision Support Systems development, smart optical sensors, data fusion and machine learning techniques. She has been involved in more than 20 EU-funded research projects from 2013 till today and she has served as coordinator of the SIEUSOIL Horizon 2020 project (https://www.sieusoil.eu/), WP leader in 1 Horizon 2020, named AfriCuLtuReS (http://africultures-platform.eu/en/), in 1 EU funded CEF telecom program, called GRAPEVINE(https://grapevine-project.eu/), in 1 PRIMA project called MEDIFIT and in 2 ERANET-ICT AGRI, PoshMyCO and ADDFerti (http://www.poshmyco.eu/ , http://www.addferti.eu/). Her recent research interests consider DSS development, condition monitoring, management for contaminated/degraded soils, post-harvest quality assessment in organic crops, bioinformatics applications in field phenotyping with autonomous platforms (e.g. UAV, robots) and application of active learning in a number of sectors from condition monitoring, yield prediction, crop status determination, weed species recognition as well as post-harvest quality determination. She is the main author of the research monograph book “Intelligent Data Mining and Fusion Systems in Agriculture” (https://shop.elsevier.com/books/intelligent-data-mining-and-fusion-systems-in-agriculture/pantazi/978-0-12-814391-9)

2. SCIENTIFIC INTERESTS

- ✓ Data Mining
- ✓ Data Fusion
- ✓ Precision Agriculture
- ✓ Automation
- ✓ Sensing
- ✓ Yield prediction
- ✓ Decision Support Systems (DSS)
- ✓ Biotic and Abiotic stressors detection in crops
- ✓ Spectrography
- ✓ Weed Detection
- ✓ Crop Monitoring
- ✓ Agrorobotics
- ✓ IoT
- ✓ Post harvest and quality assessment in agrifood sector

3. FOREIGN LANGUAGES

A. **English** Certificate of Proficiency in English of Michigan University **(C2 Level)**
B. **German** Zentrale Mittelstufenprüfung Zeugnis **(C1 Level)**
C. **Italian (B2 Level)**

4. SCHOLARSHIPS

Scholarship under State Scholarships Foundation (IKY) during academic year 2012-2013 in the «Agricultural Engineerig» field of education.

5. WORK EXPERIENCE

- July 2025-Today:

-**Associate Professor**: Faculty of Agriculture, Forestry and natural Environment, School of Agriculture, Department of Hydraulics, Soil Science and Agricultural Engineering, Laboratory of Agricultural Engineering, Aristotle University of Thessaloniki,Greece

- 2020- July 2025:

-**Assistant Professor:** Faculty of Agriculture, Forestry and natural Environment, School of Agriculture, Department of Hydraulics, Soil Science and Agricultural Engineering, Laboratory of Agricultural Engineering, Aristotle University of Thessaloniki,Greece

- 2016-2019

- **Adjunct Lecturer:** Undergraduate courses lecturing Faculty of Agriculture, Forestry and natural Environment, School of Agriculture, Department of Hydraulics, Soil Science and Agricultural Engineering, Laboratory of Agricultural Engineering, Aristotle University of Thessaloniki,Greece.

- 2016-2020:

- Research Engineer/Technical Manager: Center for Research and Technology Hellas (CERTH), Institute for Bio-Economy and Agri- Technology (IBO),(former Institute for Research and Technology Thessaly (IRETETH)

- 2013-2020:

-Research Engineer: Faculty of Agriculture, Forestry and natural Environment, School of Agriculture, Department of Hydraulics, Soil Science and Agricultural Engineering, Laboratory of Agricultural Engineering, Aristotle University of Thessaloniki,Greece

STUDIES

A. 2016 -Doctoral Degree (PhD): School of Agriculture, Forestry and Natural Environment, Laboratory of Agricultural Mechanics, Aristotle University of Thessaloniki. PhD thesis title: "Development of Computational Intelligence and Data Fusion methods with application in the field of Biosystems Engineering.
B. 2013-Master of Science Degree (MSc): School of Agriculture, Forestry and Natural Environment, Laboratory of Agricultural Engineering, Aristotle University of Thessaloniki Master's thesis title: *"Development of new signal processing techniques and Neural Networks for the purpose of optimizing an internal combustion engine fueled with biofuels*".
C**. 2011- Undergraduate Degree (B.S.Ag.).** Department of Hydraulics, Soil science and Agricultural Engineering Forestry and Natural Environment, School of Agriculture, Aristotle University of Thessaloniki**.**

6. SCIENTIFIC EXPERIENCE/DETAILS OF 3RD FUNDING

1. **European Union – NextGenerationEU funded project (TAEDR-0535675)- Innovative solutions for sustainable and environmentally friendly horticultural crops protection of Greece, in the Europe of future (2024-2025)**

-Assistant Professor: Laboratory of Agricultural Engineering, School of Agriculture, Aristotle University of Thessaloniki,Greece

-Development of Macroscopic Monitoring and Artificial Intelligence Technologies for Crop Disease Detection – Spectral Technologies for AI Disease Diagnosis. Spectral data acquisition and advanced processing techniques, creation of artificial intelligence models for the identification of early stage disease detection in grapevine and tomato crops.

2. **RESEARCH-CREATE-INNOVATE" (ESPA 2014–2020) project - Technological development and commercial implementation of a quality protocol for the export of Greek kiwifruit to important market-Premium Kiwi (2023)**

-Assistant Professor Laboratory of Agricultural Engineering, School of Agriculture, Aristotle University of Thessaloniki,Greece
-Development of predictive models of kiwifruit sustainability using data fusion and analysis techniques. Development of clustering algorithms to detect gene/protein communities/infrastructures with the palatability and/or preservation potential of kiwifruit

3. **ERANET, ICTAGRI-FOOD 2019 project-Multimodal Sensing for Individual Plant Phenotyping in Agriculture Robotics-ANTONIO (2023)**

-Assistant Professor Laboratory of Agricultural Engineering, School of Agriculture, Aristotle University of Thessaloniki, Greece
-Development of support systems recommendations with integrated using Artificial Intelligence and Combined Management of Crop Enemies for farmers

4. **ICT-AGRI ERANET Project-Potential of selective harvest based on mycotoxins content assessment in cereal crops -POSHMyCo (2023)**

-Assistant Professor /WP Leader Laboratory of Agricultural Engineering, Hydraulics, Faculty of Agriculture, Aristotle University of Thessaloniki, Greece

- Machine learning models development for the prediction and mapping of Fusarium head Blight (FHB), generation of variable rate spray recommendations, generation of measurement vehicle route recommendations based on selective harvest recommendations

5. **ICT-AGRI ERANET project- A Data-Driven Platform for Site-Specific Fertigation-**

ADDFerti (2022-2023)

- Assistant Professor /WP Leader Laboratory of Agricultural Engineering, Hydraulics, Faculty of Agriculture, Aristotle University of Thessaloniki, Greece

- Development of machine learning models for application of variable rate irrigation recommendations, creation of management zones

6. PRIMA project-An interlinked digital platform for Food Integrity and Traceability of relevant MEDIterranean supply chains -MEDIFIT (2021-2023)

-Assistant Professor /WP Leader Laboratory of Agricultural Engineering, Hydraulics, Faculty of Agriculture, Aristotle University of Thessaloniki, Greece

- Development of chemometric models, fusion of heterogeneous data for the production of fusion signatures for novel traceability techniques development in PDO products

7. INEA/CEF/ICT/A2018/1837816 project-High performance computing services for prevention and control of pests in fruit crops- GRAPEVINE (6.03.2021-28.02.2023)

-**Assistant Professor/WP leader** (6.03.2021-28.02.2023) Aristotle University of Thessaloniki, Faculty of Agriculture, Forestry and Natural Environment, School of Agriculture, Laboratory of Agricultural Engineering

- **Research Engineer** (9.10.2019-20.01.2021) Aristotle University of Thessaloniki, Faculty of Agriculture, Forestry and Natural Environment, School of Agriculture, Laboratory of Agricultural Engineering

- Diagnosis of vine diseases in combination with meteorological data and use of Deep Learning models

- DSS development for land money eligibility determination using Machine Learning and Data Mining models

8. Horizon 2020 Project Granted by the Executive Agency for Small and Medium-sized Enterprises -Enhancing Food Security in AFRIcan AgriCULTUral Systems with the Support of Remote Sensing (AfriCultuReS), Earth observation services for the monitoring of agricultural production in Africa (6.11.2017-31.10.2022)

-Research Engineer (2017-.2021) Aristotle University of Thessaloniki, Faculty of Agriculture, Forestry and Natural Environment, School of Agriculture, Laboratory of Agricultural Engineering

- **Assistant Professor (2021-2022**) Aristotle University of Thessaloniki, Faculty of Agriculture, Forestry and Natural Environment, School of Agriculture, Laboratory of Agricultural Engineering

- Crop problems detection with big data analytics and sensor fusion from remote sensing and ground sourcing data using Artificial Intelligence (AI) techniques

9. Horizon 2020 Project Agricultural Interoperability and Analysis System- ATLAS (2019-31.12.2022)

-**Research Engineer (2019-2021)** Center for Research and Technology Hellas (CERTH), Institute for Bio-Economy and Agri- Technology (IBO), (former Institute for Research and Technology Thessaly (IRETETH)/ Aristotle University of Thessaloniki, Faculty of Agriculture, Forestry and Natural Environment, School of Agriculture, Laboratory of Agricultural Engineering

Assistant Professor (2021-2022) Center for Research and Technology Hellas (CERTH), Institute for Bio-Economy and Agri- Technology (IBO), (former Institute for Research and Technology Thessaly (IRETETH)/ Aristotle University of Thessaloniki, Faculty of Agriculture, Forestry and

Natural Environment, School of Agriculture, Laboratory of Agricultural Engineering

-Crop yield prediction, development of early-stage disease detection models

10. Horizon 2020 Project Resilient Farming by adaptive Microclimate management- STARGATE (2019-2022)

-Research Engineer/ Technical Manager (2019-2021) Center for Research and Technology Hellas (CERTH), Institute for Bio-Economy and Agri- Technology (IBO), (former Institute for Research and Technology Thessaly (IRETETH)/ Aristotle University of Thessaloniki, Faculty of Agriculture, Forestry and Natural Environment, School of Agriculture, Laboratory of Agricultural Engineering

-Assistant Professor /Technical Manager (2021-2022)- Center for Research and Technology Hellas (CERTH), Institute for Bio-Economy and Agri- Technology (IBO), (former Institute for Research and Technology Thessaly (IRETETH)/ Aristotle University of Thessaloniki, Faculty of Agriculture, Forestry and Natural Environment, School of Agriculture, Laboratory of Agricultural Engineering

-Creation of an ICT platform and development of DSS suitability system for investigating crop adaptation to climate change

11. Project co-financed by Greece and the European Union (European Social Fund- ESF) through the Operational Programme «Human Resources Development, Education and Lifelong Learning 2014-2020» Screening defense responses in tomato, triggered by encapsulated biological control agents and organic defense inducers, with the use of Artificial Neural Networks. (2020-2021)

-Research Engineer Aristotle University of Thessaloniki, Faculty of Agriculture, Forestry and Natural Environment, School of Agriculture, Laboratory of Agricultural Engineering

-Development of Self-Organizing Map models for identifying fluorescence parameters directly correlated with the automatic detection of induced resistance against the fungus FORL.

- Development of Self-Organizing Map models for the automatic detection of intersystemic resistance.

12. **Horizon 2020 project- Sino-EU Soil Observatory for Intelligent Land Use Management- SiEUSOIL (2019-2022)**

Coordinator/Research Engineer (2021-2022) Aristotle University of Thessaloniki, Faculty of Agriculture, Forestry and Natural Environment, School of Agriculture, Laboratory of Agricultural Engineering

Technical Manager/ Research Engineer (2019-2021) Aristotle University of Thessaloniki, Faculty of Agriculture, Forestry and Natural Environment, School of Agriculture, Laboratory of Agricultural Engineering

-Development of a DSS system for determining land use suitability using Machine Learning and Data Mining models

13. **Project co-financed by the European Regional Development Fund of the European Union and Greek national funds through the Operational Program Competitiveness, Entrepreneurship, and Innovation, under the call RESEARCH – CREATE – INNOVATE Monitoring of surface-waters with remote sensing for the rational use of insecticides in wide area mosquito control WAMOS- (2019-2020)**.

-**Research Engineer**- Aristotle University of Thessaloniki, Faculty of Agriculture, Forestry and

Natural Environment, School of Agriculture, Laboratory of Agricultural Engineering

-Development of neural networks for vegetation classification in remote sensing data, development of one class classifiers for television data, model testing with meta-analysis of older data.

14.ELIDEK Project funded by Hellenic Foundation for Research and Innovation (HFRI) and the General Secretariat for Research and Technology (GSRT)- Development of an Innovative Traceability System for Controlling Food Safety in Sustainable AgriFood Supply Chains-TRUSTFOODS (2019)

-**Research Engineer-** Aristotle University of Thessaloniki, Faculty of Agriculture, Forestry and Natural Environment, School of Agriculture, Laboratory of Agricultural Engineering

-Application of Artificial Neural Networks & Machine Learning Algorithms fro developing an IoT RFID Detection System in order to maintain food safety in organic food chains.

15.Horizon 2020- Enhancing Food Security In African AgriCultural Systems With The Support Of Remote Sensing: AfriCultuReS- (2018-2023)

-**Research Engineer** Aristotle University of Thessaloniki, Faculty of Agriculture, Forestry and Natural Environment, School of Agriculture, Laboratory of Agricultural Engineering

- Crop problems detection with big data analytics and sensor fusion from remote sensing and ground sourcing data using Artificial Intelligence (AI) techniques

16. Horizon2020 project-European e-Infrastructure for Extreme Data Analytics in Sustainable Development -EUXDAT (.2017-2020)

-Research Engineer- Center for Research and Technology Hellas (CERTH), Institute for Bio-Economy and Agri- Technology (IBO), (former Institute for Research and Technology Thessaly (IRETETH)

-Data Mining and Deep Learning Algorithms for crop monitoring and Precision Farming

17. **NEXUS Research project (2017)**

- **Research Engineer:** Center for Research and Technology Hellas (CERTH), Institute for Bio-Economy and Agri-Technology (IBO),(former Institute for Research and Technology Thessaly (IRETETH)

- Mining and Artificial Intelligence applications in Precision Agriculture

-Crop monitoring (disease-weeds-stresses) with Computer Vision techniques and Autonomous Vehicles

18. **Neural Networks models for disease and stress mapping recognition Hummingbird LTD, London UK** (2017)

Research Engineer Aristotle University of Thessaloniki, Faculty of Agriculture, Forestry and Natural Environment, School of Agriculture, Laboratory of Agricultural Engineering

- Neural Networks for effective crop monitoring

- Automatic plant disease and weed detection with UAVs using Artificial Intelligence algorithms (ANNs, Machine Learning, Deep Learning)

19. Research Project PROMITHEUS" (2016-2017)

- **Research Engineer:** Center for Research and Technology Hellas (CERTH), Institute for Bio-

Economy and Agri-Technology (IBO),(former Institute for Research and Technology Thessaly (IRETETH)

-Biosystems Engineering Applications

20. FRACTALS FP7 project –AGROMENTORIS (2015-2016)

-**Research Engineer:** Smartphone application for disease detection and identification in plant leaves

21. ICT-AGRI II ERANET FP7 project–-FARMFUSE (2014-2015)

-Research Engineer: Aristotle University of Thessaloniki, Faculty of Agriculture, Forestry and Natural Environment, School of Agriculture, Laboratory of Agricultural Engineering

- Neural network-based mapping and algorithms for crop yield prediction. Data Fusion from multiple sources and multi-sensors relevant to soil and crop, aiming to an optimized crop production system.

22. National project-AUTOGNOSIA (2013)

-Research Engineer Research Engineer at Aristotle University of Thessaloniki, Faculty of Agriculture, Forestry and Natural Environment, School of Agriculture, Laboratory of Agricultural Engineering

- Hierarchical emergent information fusion systems with learning and cognitive capabilities that can describe the behavior of complex systems in multiple scale

7. SCIENTIFIC ACTIVITIES

7.1 SCIENTIFIC ORGANISATIONS

7.1.1 MEMBERSHIP IN ORGANISATIONS/ INTERNATIONAL CONFERENCES

- **2025:** Scientific Committee member of International Conference 3rd IEEE Conference on Agrifood Electronics 2025, Conference link: https://2025.ieee- cafe.org/committees/

- **2024:** Scientific Committee member of International Conference 2nd IEEE Conference on Agrifood Electronics 2024, Conference link: https://2024.ieee- cafe.org/committees/

- **2024:** Scientific Committee member of International Conference AgEng2024, “Agricultural Engineering challenges in existing and new agroecosystems” Conference link: https://pcoconvin.eventsair.com/ageng24/

- **2011-Today** : Member of the Geotechnical Chamber of Greece (GEOTEE)

7.2 PARTICIPATION AS REVIEWER IN INTERNATIONAL SCIENTIFIC JOURNALS WITH IF

	Journal	IF
1.	Transactions on Image Processing (IEEE)	10.8
2.	PRS Journal of Photogrammetry and Remote Sensing (Elsevier)	10.6
3.	Science of the Total Environment Journal (Elsevier)	8.2
4.	Information Processing in Agriculture (Elsevier)	7.7
5.	Computers and Electronics in Agriculture Journal (Elsevier)	7.7
6.	Food Research International (Elsevier)	7.0
7.	International Journal of Optomechatronics (Taylor &Francis)	6.7
8.	Agricultural and Forest Meteorology (Elsevier)	5.6
9.	Environmental Science and Pollution Research (Springer)	5.8
10.	CATENA Journal (Elsevier)	5.4
11.	Drones (MDPI)	4.4
12.	Journal of Biosystems Engineering (Elsevier)	4.4
13.	Remote Sensing Journal (MDPI)	4.2
14	Scientific Reports (Springer)	3.8
15.	Sensors Journal (MPDI)	3.4
16.	Agriculture Journal (MDPI)	3.3
17.	ISPRS International Journal of Geo-Information (Elsevier)	2.8
18.	Journal of Vibrational Spectrography (Elsevier)	2.7
19.	Journal of Nondestructive Evaluation (Springer)	2.5
20.	Spanish Journal of Agricultural Research	1.23
21.	Modern Mechanical Engineering	1.10
22.	Transactions on AgriFood Electronics (IEEE)	1.704

7.3 PARTICIPATION TO EDIRIAL GROUPS OF INTERNATIONAL SCIENTIFIC JOURNALS WITH IF

- **Guest Editor** in International Journal of Agriculture (https://www.mdpi.com/journal/agriculture)

  Special Issue:**" Smart Sensor-Based Systems for Crop Monitoring"**

- **Guest Editor** in International Journal of Agriculture (https://www.mdpi.com/journal/agriculture)
  Special Issue: ***Applications of Data Analysis in Agriculture-2nd Edition.***
  (https://www.mdpi.com/journal/agriculture/special_issues/E7P3369O4H)
- **Topical Advisory Panel Member** in International Journal of Remote Sensing (https://www.mdpi.com/journal/remotesensing)
- **Guest Editor** in International Journal of Remote Sensing (https://www.mdpi.com/journal/remotesensing)
  Special Issue: "Crop Disease Detection Using Remote Sensing Image

Analysis II"
(https://www.mdpi.com/journal/remotesensing/special_issues/LL7W5073WJ)

- **Guest Editor** in International Journal of Agriculture (https://www.mdpi.com/journal/agriculture)
  Special Issue:***" Applications of Data Analysis in Agriculture"***
  (https://www.mdpi.com/journal/agriculture/special_issues/4TWE01QAM0)
- **Guest Editor** in International Journal of Remote Sensing (https://www.mdpi.com/journal/remotesensing)
  Special Issue:***" Machine Learning for Multi-Source Remote Sensing Images Analysis"***
  (https://www.mdpi.com/journal/remotesensing/special_issues/multisource_image s)
- **Guest Editor** in International Journal of Remote Sensing (https://www.mdpi.com/journal/remotesensing)
  Special Issue: ***"Remote Sensing and AI Algorithms for Plant Disease and Tree Health Detection***
  (https://www.mdpi.com/journal/remotesensing/special_issues/AI_plant)
- **Guest Editor** in International Journal of Agricultural and Forest Meteorology (https://www.sciencedirect.com/journal/agricultural-and-forest-meteorology) Special Issue: ***"Advances in Crop Yield Estimation with Earth Observation"***. (https://www.sciencedirect.com/journal/agricultural-and-forest-meteorology/special-issue/10R64C4ZK49)

7.4 PARTICIPATION TO INTERNATIONAL CONFERENCES/ WORKSHOPS

Year	Conference/Workshop	Location	Country
2025	International Symposium on Plant Pathogenic Sclerotiniaceae (Botryscleromoni 2025)	Thessaloniki	**Greece**
2024	2nd IEEE Conference on Agrifood Electronics (CAFE 2024)	Xanthi	**Greece**
2023	EUROGEO Workshop (2-4 October 2023)	Bolzano	**Italy**
2022	8th International Conference on Sensors and Electronic Instrumentation Advances (SEIA' 2022)	Corfu	**Greece**
2020	9th International Conference on Information and Communication Technologies in Agriculture, Food and Environment (HAICTA 2020)	Thessaloniki	**Greece**
2015	16th International Conference on Engineering Applications of Neural Networks (EANN 2015), September 25-29, Rhodos Island, Greece	Rhodes	**Greece**
2015	7th International Conference on Information and Communication Technologies in Agriculture, Food and Environment (HAICTA 2015), September 17-20, Kavala, Greece.	Kavala	**Greece**
2015	10th International Conference on Artificial Intelligence Applications and Innovations-AIAI 2014 Conference, Rhodes, Greece	Rhodes	**Greece**
2014	Ageng 2014, Zurich-CH, July 6-10, 2014	Zurich	**Switzerland**

2014	RHEA Conference, May 21-23, Madrid, Spain	Madrid	**Spain**
2013	6th International Conference on Information and Communication Technologies in Agriculture, Food and Environment (HAICTA 2013) September, 19-22, Ionian University, Corfu, Greece.	Corfu	**Greece**
2013	14th International Conference – Engineering Applications of Neural Networks- EANN 2013, September 13-16, Halkidiki, Greece	Halkidiki	**Greece**
2013	5th International Conference on Trends in Agricultural Engineering, March 3-6 , Prague, Czech Republic	Prague	**Czech Republic**

7.4.1 SPECIAL PARTICIPATION TO SEMINARS/WORKSHOPS

- 2nd IEEE Conference on Agrifood Electronics, (26-28 September 2024), Xanthi Greece**: Keynote Speaker**

Topic: **«Digital Innovations: Enhancing Safety, Quality, and Authenticity Across the Agrifood Supply Chain»** https://2024.ieee-cafe.org/wp-content/uploads/2024/09/CAFE2024-Program-vFinal_comp.pdf

- EUROGEO Workshop 2023, (2nd -4th October 2023), Bolzano Italy**: - Invited Speaker**

Topic: **«Earth Observation for Soil Health and Sustainable Land Use Management (SIEUSOIL H2020 project)**» : https://egw2023.eurac.edu/program-outline

- 8th International Conference on Sensors and Electronic Instrumentation Advances (SEIA' 2022), (26-29 September 2022)- **Session Chairman -R**egular Session: ***Sensors Applications II*** (https://sensorsportal.com/SEIA_2022/SEIA_2022_Programme.pdf, page. 25)

- SEED PRECISION project (PRecision crop protection: deep learnIng and data fuSION) Workshop (2-3rd December, 2021, Universita degli Studi di Milano, Milan**)-Invited Speaker**

: A New Paradigm for Sustainable Development in Agriculture: Mathematics & AI Get Into the Field

Topic: «**Traceability of tomato condition using deep transfer learning neural networks**»https://sites.unimi.it/precision/wpcontent/uploads/2021/12/BookOfAbstract.pdf

- 13th IEM Caring Convention Helsinki 2021- "The Way to Net Zero» (8th -10th October, Helsinki, Finland), IEM Caring Foundation - **Invited Speaker.**

Topic: **«Intelligent Land Use planning for sustainable soil and microclimate management and mitigation of extreme weather events**»

8. PUBLICATIONS

8.1 MONOGRAPHIES

a. **MNG 1** X.E. Pantazi, D.Moshou, D. Bochtis (2019). *Intelligent Data Mining and Fusion Systems in Agriculture*, 1st Edition, Academic Press, ISBN: 9780128143919. (https://www.elsevier.com/books/intelligent-data-

mining-and-fusion-systems-in- agriculture/pantazi/978-0-12-814391-9)

8.2 SCIENTIFIC PUBLISHING

b. **SCB 1** D.Moshou & X.E. Pantazi, (2022). Data Fusion and It Applications in Agriculture, Optimization and Its Applications, in: Information and Communication Technologies for Agriculture—Theme II: Data, Cham: Springer International Publishing, 2022. p. 17-40, https://doi.org/10.1007/978-3-030-84148-52 .

8.3 SPECIAL PUBLISHING-SPECIAL ISSUES

c. **SPP 1** X.E. Pantazi (2022). Crop Disease Detection Using Remote Sensing Image Analysis. ISBN 978-3-0365-5605-5, (hardback); ISBN 978-3-0365-5606-2 (PDF), https://doi.org/10.3390/books978-3-0365-5606-2
Ebook link: https://www.mdpi.com/books/book/6293-crop-disease-detection-using-remote-sensing-image-analysis

8.4 INTERNANIONAL JOURNALS

d. **JRP 1** P., Karnoutsos, D., Katsantonis, A., Gkotzamani, A., Koukounaras, T., Kotsopoulos, X.E., Pantazi & V. P., Fragos (2025). Plant-Driven Precision Irrigation in Aeroponics: Real-Time Turgor Sensing for Sustainable Lettuce Cultivation. Agriculture, 15(18), 1948.

e. **JRP 2** M. B. Almoujahed, O. E., Apolo-Apolo, A. Morellos, X.E., Pantazi, M., Kazlauskas, Z., Kriaučiūnienė, ... & A.M., Mouazen, (2025). Cost-benefit evaluation of preventive site-specific fungicide spraying for fusarium head blight in wheat. Computers and Electronics in Agriculture, 238, 110836.

f. **JRP 3** A., Passias, A., K.A,Tsakalos, G., Kleitsiotis, E., Tsipas, K., Rallis, I.A., Fyrigos, , ... & G.C.,Sirakoulis, (2025). Recent Advances in Precision Viticulture: A Review. IEEE Transactions on AgriFood Electronics.

g. **JRP 4** A., Morellos, X.E., Pantazi, M.B., Almoujahed, Z., Kriauciuniene, M., Kazlauskas, E., Šarauskis, A.M. Mouazen (2025). Forecasting of Fusarium Head Blight spatial distribution in winter wheat using machine learning, Journal of Computers and Electronics in Agriculture. Volume 231, 109967, ISSN 0168-1699, https://doi.org/10.1016/j.compag.2025.109967.

h. **JRP 5** P., Papazoglou, I., Navrozidis, S., Testempasis, X.E., Pantazi, A., Lagopodi and T. Alexandridis (2025). Early detection of bacterial canker in tomato plants using spectroscopy for smart agriculture applications, Journal of Biosystems Engineering (τελική αποδοχή 20.1.2025, υπό έκδοση)

i. **JRP 6** K., Dolaptsis, X.E., Pantazi, C., Paraskevas, S., Arslan, Y., Tekin, B.B., Bantchina, Y., Ulusoy, K.S., Gündoğdu, M., Qaswar, D., Bustan and A.M. Mouazen A.M. (2024). A hybrid LSTM approach for irrigation scheduling in maize crop. Agriculture, 14(2), 210.

j. **JRP 7** G., Tziotzios, X.E., Pantazi, C.Paraskevas, C., Tsitsopoulos, D.,Valasiadis, E., Nasiopoulou, M., Michailidis, A., Molassiotis (2024). Non-Destructive Quality Estimation Using a Machine Learning-Based Spectroscopic Approach in Kiwifruits. Horticulturae, 10(3), 251.

k. **JRP 8** A., Morellos; K., Dolaptsis; G., Tziotzios; X.E., Pantazi; D., Kateris; R., Berruto; & D., Bochtis (2024). An IoT Transfer Learning-Based Service for the Health Status Monitoring of Grapevines. Applied Sciences, 14(3), 1049.

l. **JRP 9** B.B, Bantchina.; K.S., Gündoğdu; S., Arslan; Y. ; Ulusoy, Y. Tekin; X.E., Pantazi; K., Dolaptsis; C., Paraskevas; G., Tziotzios; M., Qaswar; A.M. & Mouazen (2024). Spatiotemporal Modeling of Soil Water Dynamics for Site-Specific Variable Rate Irrigation in Maize. Soil Systems, 8(1), 19.

m. **JRP 10** I., Navrozidis; X.E., Pantazi; A., Lagopodi; D., Bochtis & T.K., Alexandridis (2023). Application of Machine Learning for Disease Detection Tasks in Olive Trees Using Hyperspectral Data. Remote Sens., 15, 5683. https://doi.org/10.3390/rs15245683

n. **JRP 11** M., Karagiovanidis; X.E., Pantazi; D., Papamichail; & Fragos, V. (2023). Early Detection of Cavitation in Centrifugal Pumps Using Low-Cost Vibration and Sound Sensors. Agriculture, 13(8), 1544.

o. **JRP 12** X. E., Pantazi; A.L., Lagopodi; A.A., Tamouridou; N.N., Kamou; I., Giannakis; G., Lagiotis; ... & D. Moshou (2022). Diagnosis of Induced Resistance State in Tomato Using Artificial Neural Network Models Based on Supervised Self-Organizing Maps and Fluorescence Kinetics. Sensors, 22(16), 5970.

p. **JRP 13** X. E. Pantazi; A.A., Tamouridou; D., Moshou, I., Cherif; G., Ovakoglou, X., Tseni; ., ... & T.K. Alexandridis (2022). Evaluation of machine learning approaches for surface water monitoring using Sentinel-1 data. Journal of Applied Remote Sensing, 16(4), 044501-044501.

q. **JRP 14** A. Morellos; A., X.E.,Pantazi; C., Paraskevas, & D.Moshou (2022). Comparison of Deep Neural Networks in Detecting Field Grapevine Diseases Using Transfer Learning. Remote Sensing, 14(18), 4648.

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dd. **JRP 26** D., Kateris; D., Moshou; X.E., Pantazi; I., Gravalos; N., Sawalhi & S., Loutridis (2014). A machine learning approach for the condition monitoring of rotating machinery. Journal of Mechanical Science and Technology, Springer, Vol. 28, Issue 1, p.p. 61-71.

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ff. **JRP 28** X. E., Pantazi; D., Moshou; D., Kateris; I., Gravalos and P., Xyradakis, (2013). Automatic identification of gasoline – biofuel blend type in an internal combustion four-stroke engine based on Unsupervised Novelty Detection and Active Learning. 6th International Conference on Information and Communication Technologies in Agriculture, Food and Environment (HAICTA 2013), Procedia Technology, Vol. 8, p.p. 22 9–237.

8.6 INTERNATIONAL JOURNALS WITH PROCEEDINGS

[1] **ICP 1** Almoujahed, B., Apolo-Apolo, E., Morellos, A., Pantazi, E., Kazlauskas, M., Kriaučiūnienė, Z., ... & Mouazen, A. (2025). Variable rate fungicide application for fusarium head blight management in wheat fields. In Precision agriculture'25 (pp. 225-231). Wageningen Academic.

[2] **ICP 2** Pantazi, X. E., & Tsitsopoulos, C. (2024, September). Deep Transfer Learning for Improved Quality Control in Organic Tomatoes. In 2024 IEEE 2nd Conference on AgriFood Electronics (CAFE) (pp. 120-124). IEEE.

[3] **ICP 3** Morellos, A., Pantazi, X. E., Dimakopoulou-Papazoglou, D., & Katsanidis, E. (2024, September). Multi-Modal Fusion With Machine Learning Integrated Approach for the Investigation of Honey Adulteration. In 2024 IEEE 2nd Conference on AgriFood Electronics (CAFE) (pp. 115-119). IEEE.

[4] **ICP 4** Tsakalos, K. A., Kleitsiotis, G., Tompris, I., Passias, A., Stavroulakis, E., Tsipas, E., ... & Sirakoulis, G. C. (2024, September). A Comprehensive Strategy for Tomato Cultivation Utilizing Precision Agriculture Techniques. In 2024 IEEE 2nd Conference on AgriFood Electronics (CAFE) (pp. 130-134). IEEE.

[5] **ICP 5** Passias, A., Kleitsiotis, G., Tompris, I., Stavroulakis, E., Tsipas, E., Tsakalos, K. A., ... & Sirakoulis, G. C. (2024, September). A Holistic Approach to Grapevine Cultivation with Precision Viticulture. In 2024 IEEE 2nd Conference on AgriFood Electronics (CAFE) (pp. 1-5). IEEE.

[6] **ICP 6** M. Karagiovanidis M., X.E. Pantazi, V. Fragos, S. Rilling, A. Milella, G. Rein, P., Fröhlich, P. Karnoutsos, N. Koukovinos, C. Paraskevas, (2023). “Multimodal Sensing for Individual Plant Phenotyping in Agriculture Robotics”, 26th Conference on Process Integration, Modelling and Optimisation for Energy Saving and Pollution Reduction, 8–11 October 2023, Thessaloniki, .

[7] **ICP 7** K. Dolaptsis, X.E. Pantazi, G.Tziotzios, D.Stavridou, A.Morellos, C.Paraskevas, S. Arslan, Y. Tekin and A. Mouazen (2023). Smart Irrigation recommendation system using Machine Learning, 2nd International Conference on Sustainable Chemical and Environmental Engineering, 14-18 June, Limassol, Cyprus.

[8] **ICP 8** A. Morellos, X.E. Pantazi, C. Tsitsopoulos, K. Dolaptsis, G. Tziotzios, D. Stavridou, C. Paraskevas, O.E. Apolo-Apolo, M.B. Almoujahed, R. Whetton, Z. Kriauciuniene, M. Kazlauskas, E. Šarauskis and A. Mouazen (2023). Machine Learning based Prediction of Fusarium Head Blight spatial distribution in wheat fields, 2nd International Conference on Sustainable Chemical and Environmental Engineering, 14-18 June, Limassol, Cyprus.

[9] **ICP 9**. Sodaitytė, E. Šarauskis, Z. Kriaučiūniene, M. Kazlauskas, Manuel Pérez Ruiz2, Enrique Apolo-Apolo2, X.E., Pantazi, M. Díaz A.A. Hatab, E. Owusu-Sekyere, J. Carballido, R. L. Whetton, M. B. Almoujahed, A.K. Rangarajan, D. Moshou, A.M. Mouazen (2022). Smart Solutions for Selective Harvesting of Cereals Based on Mycotoxin Content, 28th International Scientific-Practice Conference “HUMAN AND NATURE SAFETY 2022”, which will take place in Kaunas, Lithuania, 4–6 May, 2022. pp13-16, ISSN 1822-1823 (online), (Print) ISSN 2538-9122, Human & Nature Safety, Vytautas Magnus University,

https://doi.org/10.7220/2538-9122.2022.

[10] **ICP 10** X. E. Pantazi, A. L. Lagopodi, A. A. Tamouridou, N. N. Kamou, I. Giannakis, G. Lagiotis, E. Stavridou, P. Madesis, G. Tziotzios, K. Dolaptsis, K. Pliatsidis and D. Moshou (2022). Fluorescence Kinetics Based Intelligent Sensor for Diagnosis of Health Condition in Tomato Plants, 8th International Conference on Sensors Engineering and Electronics Instrumentation Advances (SEIA' 2022), pp.216-220, 21-23 September 2022, Corfu Holiday Palace, Corfu, Greece

[11] **ICP 11** X.E. Pantazi, I. Cherif, A.A. Tamouridou, D. Moshou, G. Ovakoglou, T. Alexandridis, X.Tseni, S. Kalaitzopoulou, S. Mourelatos (2020). Comparing Machine Learning Algorithms for Surface Water Mapping using Sentinel-1 Data, Proceedings of the 9th International Conference on Information and Communication Technologies in Agriculture, Food and Environment (HAICTA 2020), pp.227-235, Thessaloniki, Greece, September 24-27, 2020.

[1] **ICP 12** I. Navrozidis, A. Haugommard, D. Kasampalis, T. Alexandridis, F. Castel, D. Moshou, G. Ovakoglou, X.E. Pantazi, A.A. Tamouridou, A. Lagopodi, Z. Zartaloudis, S. Mourelatos (2020) Assessing Olive Trees Health using Vegetation Indicesand Mundi Web Services for Sentinel-2 Images, Proceedings of the 9th International Conference on Information and Communication Technologies in Agriculture, Food and Environment (HAICTA 2020), pp.137-144, Thessaloniki,
Greece, September 24-27, 2020

[2] **ICP 13** Navrozidis, I., Alexandridis, T. K., Moshou, D., Pantazi, X. E., Tamouridou, A. A., Kozhukh, D., ... & de Santosi, F. J. N. (2019). Olive trees stress detection using Sentinel-2 images. In IEEE 2019 International Geoscience & Remote Sensing Symposium (IGARSS 2019) (No. IKEECONF-2019-356).

[3] **ICP 14** D. Moshou, X.E. Pantazi, R. Oberti, C. Bravo, J. West, H. Ramon, A. Mouazen (2015). Crop Health Condition Monitoring based on the identification of Biotic and Abiotic Stresses by using Hierarchical Self Organizing Classifiers. 10th European Conference on Precision Agriculture (ECPA 2015), July 12-15, Tel Aviv, Israel.

[4] **ICP 15** D. Moshou, X.E. Pantazi, D. Kateris, N. Sawalhi, E. Tsikos (2014). An Active Learning approach for the condition monitoring of rotating machinery, Proceedings Ageng 2014, Zurich-CH, July 6-10.

[5] ICP 16 X.E. Pantazi, D. Moshou, D. Kasampalis, P. Tsouvaltzis. (2014). Automatic Accessment of Phenotypes in lettuce plants by using Chlorophyll Fluorescence Kinetics and Machine Learning, Proceedings Ageng 2014, Zurich-CH, July 6-10, 2014.

[6] ICP 17 X.E. Pantazi, D. Moshou, A.M. Mouazen, (2014). Crop and weed species recognition based on hyper spectral imaging and hierarchical self-organizing maps, RHEA Conference, 21-23 May, Madrid, Spain, p.p101-110

[7] ICP 18 X.E. Pantazi, D. Moshou, R. Oberti, D. Kateris, C. Bravo, J. West, H. Ramon, A.M. Mouazen, (2014). Active learning system for autonomous combined biotic and abiotic crop stress detection, RHEA Conference, 21-23 May, Madrid, Spain, p.p167-176.

[8] ICP 19 D. Moshou, X.E. Pantazi, D. Kateris, I. Gravalos, A.M. Mouazen (2013). Cognitive fusion architectures for decision support in precision farming (FARMFUSE), Proceedings of XXXV CIOSTA CIGR V Conference, 3-5 July, Billund, Denmark.

[9] ICP 20 X. E. Pantazi, D. Moshou, D. Kateris, I. Gravalos, P. Xyradakis (2013). Automatic Identification Type Gasoline -Bioethanols Mixture in internal combustion four-stroke engine via Least Squares Support Vector Machine (LSSVM), Proceedings of XXXV CIOSTA CIGR V Conference, 3-5 July, Billund, Denmark.

[10] ICP 21 D. Moshou, D. Kateris, X.E. Pantazi, I. Gravalos, (2013). Crop and weed species recognition based on hyperspectral sensing andactive learning, Proceedings of 9th European Conference on Precision Agriculture (9th ECPA), 7- 11 July, Lleida, Catalonia, Spain

8.7 INTERNATIONAL CONFERENCES & WORKSHOPS WITH ABSTRACT (last 5 years)

[11] D. Moshou, G. Ovakoglou, X.E. Pantazi, A.A. Tamouridou, A. Lagopodi, Z. Zartaloudis, S. Mourelatos (2020) Assessing Olive Trees Health using Vegetation Indicesand Mundi Web Services for Sentinel-2 Images, Proceedings of the 9th International Conference on Information and Communication Technologies in Agriculture, Food and Environment (HAICTA 2020), pp.137-144, Thessaloniki,Greece, September 24-27, 2020.

[12] **ICP 17** M. Karagiovanidis, S. Rilling, X.E. Pantazi, V. Fragos, P. Karnoutsos, N. Koukovinos, C. Paraskevas C. (2023). Enhancing Precision Agriculture with a Multimodal Sensing System using the ANTONIO's Data Platform., AGRIVOLTAICS 2023, 30st October-1st November 2023, Athens.

[13] **ICP 18** M.B Almoujahed,.; E., Apolo-Apolo; M., Alhussein; R.L. Whetton; E., Šarauskis, Z., Kriaučiūnienė; M., Kazlauskas; M. Pérez Ruiz; Díaz; X.E. Pantazi; J. Carballido; A.A. Hatab; C.J. Lagerkvist; E., V., Owusu; A.M. Mouazen (2023). Deoxynivalenol classification under field conditions for winter wheat using hyperspectral camera. In Proceedings of the 29th international scientific-practical conference" Human and Nature Safety 2023, Kaunas, Lithuania, 10 – 12 May, 2023.

[14] **ICP 19** E., Apolo-Apolo; M.B. Almoujahed; R.L. Whetton; E., E., Šarauskis, Z., Kriaučiūnienė; M., Kazlauskas; M.,Pérez Ruiz; M., Díaz,; X.E.Pantazi.; J., Carballido; A.A. Hatab; C., Lagerkvist,.V., Owusu; D. Moshou; Mouazen, A.M. (2023). Modelling and mapping of Fusarium head blight (FHB) in wheat using hyperspectral data under field conditions. 15th IUPAC International Congress of Crop Protection Chemistry. 14th-17th March, 2023, New Delhi, India.

[15] **ICP 20** C.F., Sanchez, C.G., Muñoz, C.G., Llerena; C. Paraskevas, D.Moshou, F. J., Nieto, F.J., Lacueva Pérez, F. Landeira, G.L., Lezaun, I.Z., Nafarrate, J. Balduque-Gil J.J., Barriuso, K., Kechagias, P. Vourlioti R., del Hoyo Alonso, S., García, S., Kotsopoulos, Theano Mamouka, ; X.E., Pantazi (2022). GRAPEVINE project: hiGh peRformAnce computing sErvices for preVentIon and coNtrol of pEsts in fruit crops, p. 19, IBERGRID 2022, 10-13 October 2022 Universidade do Algarve, Spain.

[16] **ICP 21** X.E.Pantazi & D. Moshou (2021). Traceability of tomato condition using deep transfer learning neural networks, SEED PRECISION project Workshop: “A New Paradigm for Sustainable Development in Agriculture: Mathematics & AI Get Into the Field”, 2nd-3rd December 2021, Milan.