# ICVIIP 2016 : 18th International Conference on Visualization, Imaging and Image Processing


Conference Information

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## Conference Aims and Objectives

Conference Code: 16SA01ICVIIP

The **ICVIIP 2016: 18th International Conference on Visualization, Imaging and Image Processing** aims to bring together leading academic scientists, researchers and research scholars to exchange and share their experiences and research results about all aspects of Visualization, Imaging and Image Processing. It also provides the premier interdisciplinary forum for researchers, practitioners and educators to present and discuss the most recent innovations, trends, and concerns, practical challenges encountered and the solutions adopted in the field of Visualization, Imaging and Image Processing.

## Call for Contributions

All honourable authors are kindly encouraged to contribute to and help shape the conference through submissions of their research abstracts, papers and e-posters. Also, high quality research contributions describing original and unpublished results of conceptual, constructive, empirical, experimental, or theoretical work in all areas of Visualization, Imaging and Image Processing

International Science Index

**Commenced** in January 1999 **Frequency**: Monthly **Edition**: International **Abstract Count:** 27830



# 1 A Soft Computing Approach Monitoring of Heavy Metals in Soil and Vegetables in the Republic of Macedonia

**Authors:**
Vesna Karapetkovska Hristova, M. Ayaz Ahmad, Julijana Tomovska, Biljana Bogdanova Popov, Blagojce Najdovski

**Abstract:**
The average total concentrations of heavy metals; (cadmium [Cd], copper [Cu], nickel [Ni], lead [Pb], and zinc [Zn]) were analyzed in soil and vegetables samples collected from the different region of Macedonia during the years 2010-2012. Basic soil properties such as pH, organic matter and clay content were also included in the study. The average concentrations of Cd, Cu, Ni, Pb, Zn in the A horizon (0-30 cm) of agricultural soils were as follows, respectively: 0.25, 5.3, 6.9, 15.2, 26.3 mg kg-1 of soil. We have found that neural networking model can be considered as a tool for prediction and spatial analysis of the processes controlling the metal transfer within the soil-and vegetables. The predictive ability of such models is well over 80% as compared to 20% for typical regression models. A radial basic function network reflects good predicting accuracy and correlation coefficients between soil properties and metal content in vegetables much better than the back-propagation method. Neural Networking / soft computing can support the decision-making processes at different levels, including agro ecology, to improve crop management based on monitoring data and risk assessment of metal transfer from soils to vegetables.

**Keywords:** soft computing approach, total concentrations, heavy metals, agricultural soils

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