

Curriculum Vitae

PERSONAL INFORMATION

Family Name, First Name: Pikoulis, Erion-Vasilis
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EDUCATION

- 2015 **PhD, Department of Computer Engineering and Informatics,**
University of Patras
Title of Dissertation: "*Seismic Event Relocation*".
- 2008 **M.Sc., Interdepartmental Program of Postgraduate Studies "Signal
and Image Processing Systems",** (Grade: 9.5/10)
Title of Thesis: "*Location and Extraction of Robust Seismogram
Descriptors, for the Identification of Similar Seismograms*".
- 2003 **Diploma in Engineering from the Department of Computer
Engineering and Informatics,** University of Patras, (Grade: 8.21/10)
Title of Thesis: "*Interconnection of piezoelectric tactile sensors with the
TMS320C31 Evaluation Board and Guiding of the Robotic Arm UMI
RT100, for the safe holding of solid objects*".

CURRENT POSITION

Post-doc researcher, a) Signal Processing & Communications (SPC) Lab, Department of Computer Engineering and Informatics, University of Patras, Greece, **b)** Industrial Systems Institute (I.S.I.), Research Center Athena, Patras, Greece.

RESEARCH INTERESTS

- Automatic seismic signal detection.
- Stochastic signal modelling and parameter estimation
- Deep Learning
- Pattern recognition and clustering techniques.
- Array processing and beamforming techniques.
- Inverse problem theory.

RESEARCH SUMMARY

The main contributions of my research concern the following topics:

1. Automatic Seismic Event Detection (J1, C2, C3, C5).
2. κ -estimation (J2, P5)
3. Seismogram comparison (P1).
4. Data Clustering (P2, C4).
5. Automatic pigment classification based FORS measurements (C6, C7).
6. Detection and estimation in seismic arrays (J4, P4).
7. Blind Beamforming (J3, C8).
8. Automatic P-picking: estimation of P-wave onset time (P3, C1).

PARTICIPATION IN RESEARCH PROGRAMMES

2019- Research project "*Deep embedded vision using sparse convolutional neural networks - (DEEPEVloT)*", at the Industrial Systems Institute (I.S.I.), Athena Research Center, Patras Greece.

Research project "*Innovative Application of Industrial Internet of Things (IIoT) in Smart Environments - (I3T)*", at the Industrial Systems Institute (I.S.I.), Athena Research Center, Patras Greece.

2018 Research project "*Introducing the use of beamforming to improve the estimation of seismic rock response*", at the **University of Greenwich, UK**.

2017 Research project "*Blind Beamforming in Seismic Arrays*", at **NORSAR, Norway**, in the framework of the "Seismology and Earthquake Engineering Research Infrastructure Alliance for Europe-Transnational Access" (SERA-TA), funded by the European Union's Horizon 2020 research and innovation programme.

2014-2015 Research project "DOCCULTURE" (*Development of an Integrated Information Environment for Assessment and Documentation of Conservation Interventions to Cultural Works/Objects with Non-Destructive Techniques-NDTs*), in the framework of the THALES Program, co-financed by the European Union (European Social Fund - ESF) and Greek national funds.

Project SMART CAM: Monitoring movement and shopping behavior of a chain-store's customers with the use of smart cameras.

2013-2014 Project "*Software Development for the Simulation of Seismic Rupture in Elastic Medium and the Inversion of Geodetic Data*", in the framework of the Research Program "Using space geodesy to investigate the mechanics of earthquake ruptures", funded by the

General Secretariat for Research and Technology, as part of the Transnational Cooperation between Greece and the Czech Republic.

Research project "ENDECON" (*Energy Efficient Design of Communication Networks*), in the framework of the THALES Program, co-financed by the European Union (European Social Fund - ESF) and Greek national funds.

2009-2011 Research project "*Seismic Event Relocation*" in the framework of the Basic Research Program "K. Karatheodori", funded by the Research Committee of the University of Patras.

JOURNAL REVIEWER

2015 - IEEE Transactions on Geoscience and Remote Sensing.

TEACHING ACTIVITIES

- 2008-2013 Teaching Assistance:
- Introduction to the Theory of Signals and Systems,
 - Digital Signal Processing,
- Department of Computer Engineering and Informatics, University of Patras, Greece.
- 2007 Teaching Assistance:
- Applications of digital signal processing.
- Department of Computer Engineering and Informatics, University of Patras, Greece.

PROGRAMMING SKILLS

- Operating Systems: Windows, Linux, Unix.
- Programming Languages:
 - Excellent skills in the MATLAB environment.
 - Very good skills in the C language.
 - Extended experience in C++, Java.
 - Experience in Python, PHP, MySQL Power BI.
- Basis skills in Unix Network Programming.
- E-Cad Tools: Modelsim, Leonardo.
- Office Tools: Microsoft office, Microsoft Visio, Latex.

LANGUAGE SKILLS

- Greek: native language
- English: very good verbal/written skills
- German: good verbal/written skills (Zertifikat Deutsch - Grade: Excellent).

PUBLICATIONS IN PEER-REVIEWED JOURNALS

- J4 **E-V. Pikoulis**, E. Z. Psarakis, and Johannes Schweitzer, *Joint Signal Detection and Parameter Estimation in Seismic Arrays*, Geophysical Journal International, (under preparation).
- J3 **E-V. Pikoulis** and E. Z. Psarakis, *A New Blind Beamforming Technique for the Alignment and Enhancement of Seismic Signals*, IEEE Transactions on Geoscience and Remote Sensing (TGARS), (to be submitted, 2019).
- J2 **E-V. Pikoulis**, Olga-Joan Ktenidou, E. Z. Psarakis, and Norman Abrahamson, *Stochastic Signal Modelling for κ Estimation*, Journal of Geophysical Research, (submitted, Sept. '19).
- J1 **E-V. Pikoulis** and E. Psarakis, *Automatic Seismic Signal Detection via Record Segmentation*, IEEE Transactions on Geoscience and Remote Sensing (TGARS), vol. 53, no 7, pp. 3870-3884, 2015 (*Impact factor: 4.94*).

PUBLICATIONS IN PEER-REVIEWED CONFERENCES (full papers)

- C10 **E-V. Pikoulis** and E. Psarakis, *A New Blind Beamforming Technique for the Alignment and Enhancement of Seismic Signals*, European Signal Processing Conference (EUSIPCO 2018), Rome, September 2018.
- C9 **E-V. Pikoulis**, E. Sakkopoulos, E. Viennas, N. Achilleopoulos, E. Cheilakou, A-C. Saint, M Koui and A. Tsakalidis, *Data Management for Materials Identification, Damage Assessment and Restoration of Cultural Objects*, Model and Data Engineering: 5th International Conference, MEDI 2015, Rhodes, Greece, September 26-28, 2015, Proceedings.
- C8 D. Kouis, E. Vassilakaki, E. Vraimaki, E. Cheilakou, A. Saint, V. Sakopoulos, M. Viennas, **E-V. Pikoulis**, N. Nodarakis, N. Achilleopoulos, S. Zervos, G. Giannakopoulos, D. Kyriaki-Manessi, A. Tsakalidis and M. Koui, *Standardizing NDT& E techniques and conservation metadata for cultural artifacts*, Metadata and Semantics Research: 9th Research Conference, MTSR 2015, Manchester, UK, September 9-11, 2015 , Proceedings.
- C5 A. Lois, E. Psarakis and **E-V. Pikoulis**, *A New Thresholding Type Technique for The Detection of Seismic Events*, European Signal Processing Conference (EUSIPCO 2013), Marrakech, September 2013.
- C4 **E-V. Pikoulis** and E. Psarakis, *A New Iterative, Graph Based Clustering Method*, IEEE 12th International Conference on Bioinformatics and Bioengineering (BIBE 2012), Larnaca, November 2012.
- C3 **E-V. Pikoulis** and E. Psarakis, *A New Automatic Method for Seismic Signals Segmentation*, IEEE International Conference on Acoustics, Speech and Signal Processing (ICASSP 2012), Kyoto, March 2012.
- C2 **E-V. Pikoulis** and E. Psarakis, *A New Hypothesis Testing Based Technique For the Simultaneous Detection of Seismic Events*, IEEE 11th

International Symposium on Signal Processing and Information Technology (ISSPIT 2011), Bilbao, December 2011.

- C1 **E-V. Pikoulis** and E. Psarakis, *A Ratio Test For the Accurate Automatic P-wave Onset Detection*, IEEE International Conference on Signal Processing (ICSP 2010), Beijing, October 2010.

PRESENTATIONS IN ABSTRACT-BASED CONFERENCES

- P5 **E-V. Pikoulis**, O-J. Ktenidou, N. Abrahamson, and E. Psarakis, *On the effect of noise on kappa estimation*, The European Seismological Commission 36th General Assembly, ESC2018, Malta, September 2018.
- P4 **E-V. Pikoulis**, E. Psarakis, and J. Schweitzer, *Joint Signal Detection and Parameter Estimation in Seismic Arrays*, The European Seismological Commission 36th General Assembly, ESC2018, Malta, September 2018.
- P3 A. Lois, E. Z. Psarakis, **E-V. Pikoulis**, E. Sokos and G. A. Gelentis, *A New Chi-Squared based Test Statistic for the Detection of Seismic Events and HOS based Pickers Evaluation*, 32nd ESC Assembly, Montpellier, September. 2010.
- P2 E. Sokos, **E-V. Pikoulis**, E. Psarakis, and A. Lois, *The 2007 Swarm In Trichonis Lake Using Data From A Microseismic Network*, 12th International Congress, Bulletin of the Geological Society of Greece, Patras, May 2010.
- P1 **E-V. Pikoulis**, E. Psarakis, and E. Sokos, *A New Two Step Correlation Based Technique for The Classification Of Seismic Events*, First European Conference on Earthquake Engineering and Seismology, Geneva, September 2006.