

THE IEEE SEVENTH INTERNATIONAL CONFERENCE ON THE IMAGE AND SIGNAL PROCESSING AND THEIR APPLICATIONS



ISPA 2022

**Faculty of Sciences & Technology Site -1- Route Belhcel
Mostaganem, Algeria**



8th & 9th May 2022

Program

Sunday, May 8th

08:00-08:30: Registration

08:30-08:45: Official opening

Honorary Chair, ISPA 2022: Professor Belabbas Yagoubi

Rector of Abdelhamid Ibn Badis University of Mostaganem, Algeria

Chairs: Malika Mimi, Abdeldjalil Ouahabi and Abdelmalik Taleb-Ahmed

Auditorium of the faculty of exact sciences and computer science

08:45-09:30: Plenary conference I

Professor Habib Zaidi

Geneva University Hospital, Switzerland

The emerging role of deep learning in multimodality medical imaging

09:30-10:00: Coffee Break

Sunday, May 8th

10h00-12h20: Oral Session

<p><u>Session: Image Processing</u> (Conference Room I) <u>Chairs:</u> Pr Ayache Bouakaz, Pr Madani Ouldmammar</p>	<p><u>Session: Telecommunication</u> (Conference Room II) <u>Chairs:</u> Pr Sbaa Salim, Pr Ouldali Abdelaziz</p>
<p><u>10:00 Amina Aarizou</u> and Mostefa Merah. <i>Transfer Learning for Plant Disease Detection on Complex Images.</i></p> <p><u>10:20 Abdelhakim Fares</u>, Abdallah Meraoumia and Abderrahim Fayçal Megri. <i>Contactless Palmprint Recognition System Using ICANet-Based Deep Features.</i></p> <p><u>10:40 Insaf Adjabi, Amir Benzaoui.</u> <i>Combining hand-crafted and deep-learning features for single sample face recognition</i></p> <p><u>11:00 Nassima Jamila Megaiz</u> and Abdelghani Djebbari. <i>Securing medical images: A crypto-watermarking and biometrics-based scheme.</i></p> <p><u>11:20 Billel Nebili</u>, Atmane Khellal, Abdelkrim Nemra, Ikbal Abdselam Bououden and Abdeldjalil Belhafsi. <i>Autoencoder-based Local Descriptor for Target Recognition in Infrared Images</i></p> <p><u>11:40 Sara Atek</u>, Imane Mehidi, Dalel Jabri and Djamel Eddine Chouaib Belkhiat. <i>SwinT-Unet: Hybrid architecture for Medical Image Segmentation Based on Swin transformer block and Dual-Scale Information</i></p> <p><u>12:00 Nadia Kermouni Serradj</u>, Messadi Mohammed and Lazzouni Sihem. <i>Classification of Fundus Images based on Multifractal Features</i></p>	<p><u>10:00 Turkiya Abes</u>, Keltouma Nouri, Amaria Saidi and Kada Becharef. <i>Design of Algeria Flag shape Antenna Based On A New Circular SIW-WUVM Topology</i></p> <p><u>10:20 Hakim Tayakout</u>, Fatima Zohra Bouchibane and Elhocine Boutellaa. <i>A New Distributed-STBC Scheme for Cooperative Relaying in Wireless Networks</i></p> <p><u>10:40 M'Hammed Achour</u> and Mohammed Mana. <i>Seasonal Adjustment for traffic modeling and analysis in IEEE 802.15.4 networks</i></p> <p><u>11:00 Amar Tou</u>, Benattou Fassi, Samia Driz and Iman Ouahab. <i>Investigation on different Rain Conditions over 40 Gbps DPSK-FSO Link: ALGERIA Climate</i></p> <p><u>11:20 Hadjer Abdi</u> and Boukli Hacene Ismail. <i>A Dual Image Watermarking Scheme Based on WPT And Chaotic Encryption for Medical Data Protection</i></p> <p><u>11:40 Abdennour Fellag Chebra</u>, Ahmed Riad Borsali and Mehdi Rouissat. <i>Bidirectional transmission over optical fiber with Intermediate frequency for 5G system</i></p> <p><u>12:00 Ahmed Moumena.</u> <i>Centralized Wideband Cooperative CRs Combined with PCA Anomaly Detector in the Presence of Jammer Attacks</i></p>

12:20-13:20 Lunch Break

13:20-15:20: Oral Session

<p><u>Session: Signal processing</u> (Conference Room I) <u>Chairs:</u> Dr Ammar Mesloub, Dr Amir Benzaoui</p>	<p><u>Session: Biomedical engineering</u> (Conference Room II) <u>Chairs:</u> Pr Fella Hachouf, Pr Nasreddine Berrached</p>
<p><u>13:20 Mohammed Amin Adoul</u>, Mansour Abed and Adel Belouchrani. <i>Enhancement of a compact support time-frequency distribution derived from a polynomial kernel using image processing</i></p> <p><u>13:40 Hamidou Ghilassi</u>, Nacerredine Lassami and Ammar Mesloub. <i>Non-contact estimation of breathing parameters based on CW radar</i></p> <p><u>14:00 Hamza Kheddar</u>, Ahmed Cherif Mazari and Gokhan Hakki Ilk. <i>Speech Steganography based on Double Approximation of LSFs Parameters in AMR Coding</i></p> <p><u>14:20 Khadidja El Maati</u>, Benoudnine Hadjira and Meche Abdelkrim. <i>The Effect of the Width of non-stationary Spikes on their Detection using the Kalman Filter</i></p> <p><u>14:40 Lyna Henaar Hasnaoui</u> and Abdelghani Djebbari. <i>Epileptic Activity Prediction Within Pre-ictal Epochs: Application on Selected Channels</i></p> <p><u>15:00 Ahmed Krobb</u>, Mohamed Debyeche and Sid Ahmed Selouani. <i>Study of the Performance of Speaker Verification System based on Multi-resolution Cochleagram Features in Noisy Environment.</i></p>	<p><u>13:20 Amaria Saidi</u>, Keltouma Nouri and Turkiya Abes. <i>Miniature Circular Implantable antenna for Wireless Biomedical Applications</i></p> <p><u>13:40 Asmae Mama Zair</u>, Assia Bouzouad-Cherfa, Yazid Cherfa and Nour Eddine Belkhamza. <i>Heart Outer Surface Segmentation from Computed Tomography Images</i></p> <p><u>14:00 Abdelakram Hafid, Mehdi Medjek, Redouane Abd El Ghani Bediaf and Sabrina Difallah</u>. <i>Affordable Custom made Physiological Measurement Instrumentation Based on Raspberry PI</i></p> <p><u>14:20 Iman Ouahab</u>, Samia Driz and Benattou Fassi. <i>All Optical Biosensors for Glucose and Urea Detection Based on Photonic Crystal Nano Technology</i></p> <p><u>14:40 Sarah Arab</u>, Aissa Boudjella and Bachir Bellebna. <i>Validation of machine learning for Clinical Assessment of lumbar spine pathologies Using Graphic User Interface</i></p> <p><u>15:00 Kahina Amara</u>, Ali Aouf, Oussama Kerdjij, Hoceine Kennouche, Oualid Djekoune, Mohamed Amine Guerroudji, Nadia Zenati and Djamel Aouam. <i>Augmented Reality for COVID-19 Aid Diagnosis: Ct-Scan segmentation based Deep Learning</i></p>

15:20-16:20: Coffee Break

15:20-16:20: Poster Session I

Chairs: Pr Zine-Eddine Baarir, Pr Abdelmalik Taleb-Ahmed and Pr Salim Sbaa

PI.1: Aissa Boudjella, Manal Yasmine Boudjella and Bachir Bellebna.

Epileptic Disease Prediction Using Graphic User Interface –Machine Learning Algorithm.

PI.2: Hichem Mahgoun, Ali Taieb, Boussad Azmedroub and Boularbah Souissi.

Generalized Pareto distribution exploited for ship detection as a model for sea clutter in a Pol-SAR application

PI.3: Ihssane Houhou, Athmane Zitouni, Yassine Ruichek, Salah Eddine Bekhouche and Abdelmalik Taleb-Ahmed.

Improving ViBe-based Background Subtraction Techniques Using RGBD Information.

PI.4: Manel Labdi, Mohamed Bentoumi, Mohamed Daoud, Larbi Arezki and Mansour Abed.

On the framework of cardiac arrhythmia characterization using morphological and statistical features.

PI.5: Baya Lina Menai and Mohamed Chaouki Babahenini.

Recognizing the style of a fine-art painting with EfficientNet and Transfer learning.

PI.6: Rahmouna El Bouslemti and Salah-Belkhodja Faouzi.

New Type of Power Dividers of Microstrip Transmission Lines.

PI.7: Nour El Houda Yahi and Sid Ahmed Elahmar.

TH-UWB Cooperative Relaying Network with Filtering.

PI.8: Wahiba Belgacem, Belgacem Nassima and Rabah Mohammed Amin.

New Circular Polarization Flexible Ku Microstrip Antenna Design for Direct Broadcast Satellite Application.

PI.9: Kadda Djebbar, Malika Mimi, Khadidja Berradja and A. Taleb-Ahmed.

Deep convolutional neural networks for detection and classification of tumors in mammograms: A survey

PI.10: Naceur Aounallah and Ali Khalfa.

Direction-of-arrival estimation with new versions of Min-Norm algorithm based on Nyström method.

PI.11: Hakima Moulay, Ahmed Bouzidi Djebbar and Brahim Dehri.

Blind Digital Modulation Classification for Cooperative STBC-OFDM Systems based on Random Subspace and AdaBoost Classifiers.

PI.12: Abdesselam Ferdi, Said Benierbah and Youcef Ferdi.

U-Net-based COVID-19 CT Image Semantic Segmentation: A Transfer Learning Approach.

PI.13: Fayza Ghembaza and Abdelghani Djebbari.

A Robust dynamic EEG Channel selection using Time-frequency Extended Renyi Entropy.

PI.14: Hicham Megnafi, Khayra Haddouche and **Zoheir Karaouzene**.

Creation of an application under MapBasic for the drive test reports automation in cellular networks.

PI.15: Asmaa Hadjer Saboundji, Souhila Meziane, Mohammed Dahmani, Abdelkrim Meche and Mokhtar Keche.

Accurate visible light positioning system using neural network.

PI.16: Lysa Ait Messaoud and **Fatiha Merazka**.

PSO and CPSO Based Interference Alignment for K-User MIMO Interference Channel.

PI.17: Imed Amamra, Nadir Derouiche and Oulfa Laouar.

Non-Sliding Window Decoding of Braided Convolutional Codes.

PI.18: Abderrahim Annou, Souad Berhab and Fouad Chebbara.

Koch Snowflake Fractal Patch Antenna with ENG Metamaterial loads for WiMAX and Wi-Fi.

PI.19: Hamza Chekireb, Lamy Fergani and Rochedi Rouaibia.

Improving LTE network retainability KPI prediction performance using LSTM and Data Filtering technique.

PI.20: Aissa Boudjella, **Charaf Eddine Chenen**, Bachir Bellebna, Sarah Arab and Rabah Guerbouz.

Machine learning on the diagnosis of brain tumors.

PI.21: Yahia Hathat, Djamel Samai, Azeddine Benlamoudi, Khaled Bensid and Abdelmalik Taleb-Ahmed.

SNCF workers detection in the railway environment based on improved YOLO v5.

PI.22: Adel Boudiaf, Khaled Harrar, **Said Benlahmidi**, Rachid Zaghdoudi, Slimane Ziani and Samira Taleb.

Automatic surface defect recognition for hot-rolled steel strip using AlexNet convolutional neural network.

PI.23: Mohamed Amine Guerroudji, Kahina Amara, Djamel Aouam, Nadia Zenati, Oualid Djekoune and Mostefa Masmoudi.

Brain Tumor Segmentation on MRI using a GVF Snake Model.

PI.24: Samia Bougareche, **Soraya Zehani** and Malika Mimi.

Fashion Classification using Machines Learning, Deep Learning Models and Transfert Learning.

PI.25: Mohammed Belkheir, Mehdi Rouissat, **Mohamed Achraf Boukhobza**, Allel Mokaddem and Merahi Bouziani.

A New lightweight solution against the version number attack in RPL-based IoT networks.

PI.26: Fethi Demim, Abdelkrim Nemra, Abdenebi Rouigueb, Abdelouahab Bazoula, Mustapha Hamerlain and Rekia Bouguessa..

Localization of an Unmanned Aerial Vehicle with an Improved Technique based on New Form of the Smooth Variable Structure Filter .

PI.27: Ahcene Arbaoui, Chouaib Aribi and Saddika Mohamadi.

CNN-based Concrete Cracks Detection Using Multiresolution Analysis.

PI.28: Wahiba Menasri and Karim Meddah.

Low level Syntax Elements Study in Intra HEVC/H.265 Video Codec.

PI.29: Nouredine Aissaoui, Redouane Kaibou and Mohamed Salah Azzaz.

Real-Time FPGA Implementation of Digital Video Watermarking Techniques using Co-Design Approach: Comparative Study.

PI.30: Nour El Houda Bouakal, Messaoud Hettiri, Abdelhakim Chergui, Abdelkrim Ouafi, Azeddine Benlamoudi and Salah Eddine Bekhouche.

Kinship Verification System based on the Color Spaces Analysis.

Sunday, May 8th

16h20-18h20: Oral Session

<p><u>Session: Applications I</u> (<i>Conference Room I</i>) <u>Chairs:</u> Pr Abdeldjalil Ouahabi, Dr Merzak Ferroukhi</p>	<p><u>Session: Applications II</u> (<i>Conference Room II</i>) <u>Chairs:</u> Pr Habib Zaidi, Dr Soraya Zehani</p>
<p><u>16:20 Abdelmalik Mekaoussi</u> and Mohammed Titaouine. <i>Analysis of the U-shaped geometry of a frequency selective surface using the WCIP.</i></p> <p><u>16:40 Achraf Djerida.</u> <i>Assessment of drought conditions in Algeria using satellite images on the period (2000-2021).</i></p> <p><u>17:00 Aissa Boudjella,</u> Manal Yasmine Boudjella, Bachir Bellebna and Djamila El-Kebir. <i>Machine Learning-Based Classification of Chest X-Ray MRI Images into Covid-19 -Graphic User Interface</i></p> <p><u>17:20 Lyes Abada,</u> Saliha Aouat, Roufaida Elfani and Yesma Hinane Zamoum. <i>Three-dimensional photometric reconstruction of a single view using machine learning techniques.</i></p> <p><u>17:40 Zhor Diffallah,</u> Hadjer Ykhlef and Hafida Abed. <i>Mean Teacher for Weakly Supervised Polyphonic Sound Event Detection: An Empirical Study.</i></p> <p><u>18:00 Hossena Djouima,</u> Athmane Zitouni, A. Chaouki Megherbi and S. Sbaa. <i>Classification of Breast Cancer Histopathological Images using DensNet201</i></p>	<p><u>16:20 Hamza Abadlia,</u> Ammar Mesloub and Ibrahim Kakouche. <i>Image reconstruction and enhancement for radar imaging using IR-UWB signals.</i></p> <p><u>16:40 Azeddine Bensaad,</u> Khaled Loukhaoukha and Said Sadoudi. <i>Keypoint-based copy-move forgery detection in digital images: a survey.</i></p> <p><u>17:00 Nadjla Bentekhici,</u> Assia Saad and Ahmed Zegrar. <i>Contribution of spectral indices of chlorophyll (RECI and GCI) in the analysis of multi-temporal mutations of cultivated land in the Mostaganem plateau</i></p> <p><u>17:20 Hichem Mahgoun,</u> Ali Taieb, Boussad Azmedroub and Mounira Ouarzeddine. <i>Combination of MUSIC inversion algorithm with SKP decomposition for forest height estimation in a Tomography SAR application.</i></p> <p><u>17:40 Isma Akli,</u> Kamel Abdous and Sebaa Abderahmane. <i>Hardware in The Loop Simulation for robot Navigation with RFID.</i></p> <p><u>18:00 Hadjer Ykhlef,</u> Zhor Diffallah and Adel Allali. <i>Ensembling Residual Networks for Multi-Label Sound Event Recognition with Weak Labeling</i></p>

Monday, May 9th

08:00-08:30: Registration

Conference Room I

08:30-09:15: Plenary conference II

Professor Ayache Bouakaz.

Directeur de recherche Inserm, University of Tours, France

Ultrasound imaging

09:15-10:15: Coffee Break

Monday, May 9th

09:15-10:15: Poster Session II

Chairs: Pr Youcef Ferdi, Pr Abdelmalik Taleb-Ahmed and Pr Abdelkrim Ouafi

PII.1: Aissa Boudjella, Manal Yasmine Boudjella and Bachir Bellebna.

Machine Learning KNN Classification An Approach on Detecting Abnormality in Brain Tissues MRI-Graphic User Interface.

PII.2: Aissa Boudjella, Manal Yasmine Boudjella and Bachir Bellebna.

Parkinson 's Disease Prediction Using Graphic User Interface-Machine Learning Algorithm.

PII.3: Mohamed Benaouali, Mohamed Bentoumi, Menad Touati, Abdelmalik Taleb Ahmed and Malika Mimi.

Segmentation and classification of benign and malignant breast tumors via texture characterization from ultrasound images.

PII.4: Faical Farah, Toufik Laroussi and Hichem Madjidi.

A Fast Ship Detection Algorithm based on Automatic Censoring for Multiple Target Situations in SAR Images.

PII.5: Mabrouk Atrouche, Soulef Ayad and Mounir Belattar.

Comparative Study of dynamic Fairness and Fixed Power allocation Algorithms In Non- Orthogonal Multiple Access system.

PII.6: Saida Sarra Boudouh and Mustapha Bouakkaz.

Breast Cancer: Using Deep Transfer Learning Techniques AlexNet Convolutional Neural Network For Breast Tumor Detection in Mammography Images.

PII.7: Aida Chefrour.

A modified Incremental Density Based Clustering Algorithm.

P11.8: Widad Belaoura, Khalida Ghanem, Hicham Bousbia Salah and Mourad Nedil.

On the Impact of Hardware Impairments on mm-Wave MIMO Underground Channel Estimation.

P11.9: Basma Beroual, Abir Betka and Salim Sbaa.

A review and Comparing different of the most commonly Criteria for human age estimation techniques.

P11.10: Madaoui Lotfi and Malika Kedir-Talha.

Classification of gait patterns in the time domain using accelerometer signal.

P11.11: Imene Setha and Hassina Aliane.

Paragraph vector model for plagiarism detection.

P11.12: Lyes Abada, Merouane Bennaceur, Ahmed Boudjenana and Saliha Aouat.

Using PSO metaheuristic to solve photometric 3D reconstruction.

P11.13: Sara Sabba, Nahla Chkired, Hana Kateb, Nassira Chekkai and Mohammed Chelbi.

Sentiment Analysis for IMDb Reviews Using Deep Learning Classifier.

P11.14: Houda Latrache, Lallouani Bouchakour and Fariza Meziani.

Isolated Arabic Characters Recognition System Based On Combined Features And DNN.

P11.15: Sid Ahmed Henni, Sidali Bourenane, Benabdellah Yagoubi and Jean Caelen.

Detection of serious falls by camera for the safety of old person in intelligent building.

P11.16: Omar Guermoua, Abdelheq Boukarkar, Abdelmounaim Boulahbel, M. Anouar Ghozlane and M. Amine Merabet.

A Continuously Tunable Low-Cost 311 Phase Shifter for Beam-Steering Applications.

P11.17: Yasser Radouane Haddadi and Boualem Mansouri.

Ultrasound Medical Image Deconvolution Using L2 Regularization Method and Artificial Bee Colony Optimization Algorithm.

PII.18: Salima Attache, Labib Sadek Terrissa, **Ikram Remadna**, Soheyb Ayad, Fadila Madaci and Nouredine Zerhouni.

Predicting COVID-19 Outbreak in Algeria Using Long Short-Term Memory Networks.

PII.19: **Hakim Tayakout**, Fatima Zohra Bouchibane and Elhocine Boutellaa.

On the Robustness of Digital Modulation Recognition for Cooperative Relaying Networks under Imperfect CSI.

PII.20: Fayçal Abbas, **Mehdi Malah** and Mohamed Chaouki Babahenini.

Efficient deep Neural Network Architectures for Subsurface Scattering Approximation.

PII.21: **Khalil Bousbai** and Mostefa Merah.

Hand Gesture Recognition Using Capabilities of Capsule Network and Data Augmentation.

PII.22: **Reda Yagoub**, Mohamed Benaissa and Belkacem Benadda.

Web Browser Based Real Time Spectrum Analyzer for RTL-SDR Dongles.

PII.23: **Hasna Yazid** and Said Gaci.

Machine learning-based techniques for reservoir characterization using rock-typing from well logs.

PII.24: **Zahira Hanane Meftahi** and Medjeded Merati.

Utilization of pre-trained models of CNN in mammograms processing for the diagnosis of breast cancer.

PII.25: **Djamel Eddine Boudechiche**, Nadir Boudjefdjouf and Said Benierbah.

Reducing the feedback requests in distributed coding of capsule endoscopy images with an LSTM model.

PII.26: **Souad Chabbi**, Faiçal Farah and Nouh Guidoum.

CFAR-CNN Detector of Ships from SAR Image Using Generalized Gamma Distribution and Real Dataset.

PII.27: **Aissa Amrouche**, Youssouf Bentrchia, Ahcène Abed and Nabil Hezil.

Vehicle Detection and Tracking in Real-time using YOLOv4-tiny.

PII.28: **Ismail Haddad**, Djamel Herbadji, Belmeguenai Aissa and Selma Boumerdassi.

Color image encryption based on Fractional-order logistic map

Monday, May 9th

10h15-12h15: Oral Session

<p><u>Session: Image Processing</u> (Conference Room I) <u>Chairs:</u> Pr Ayache Bouakaz, Pr Madani Ouldmmamar</p>	<p><u>Session: Telecommunication</u> (Conference Room II) <u>Chairs:</u> Dr Chaker Essid, Dr Mustapha K. Abderrahmane Didiche</p>
<p><u>10:15 Merzak Ferroukhi.</u> <i>Automatic diagnosis of COVID-19 using deep learning</i></p> <p><u>10:35 Imane Nedjar,</u> Hicham Mohamed Sekkil, Mahmoud Mebrouki and Mokhtaria Bekkaoui. <i>A Comparison of Convolutional Neural Network Models for Driver Fatigue Detection</i></p> <p><u>10:55 Radja Kheddam</u> and Aichouche Belhadj Aissa. <i>Supervised Classification of Satellite Images: From Statistical Approach to Metaheuristic Approach</i></p> <p><u>11:15 Meriem Saim</u> and Amel Feroui. <i>Classification and Diagnosis of Alzheimer's Disease based on a combination of Deep Features and Machine Learning</i></p> <p><u>11:35 Zoubida Mahi,</u> Moussa Sofiane Karoui and Mokhtar Keche. <i>A new star detection algorithm based on the combination of thresholding and filtering technique</i></p>	<p><u>10:15 Amel Haouzi,</u> Samir Kameche and Haroun Errachid Adardour. <i>Overview: Application of Cognitive Radio Technology in Fifth-Generation Wireless Communications</i></p> <p><u>10:35 Billal Belmahdi</u> and Mazighi Khaled. <i>Implementation Efficiency of a Two-Stage EDFA Amplifier with an Inverted Trapezoidal Filter on Gain Flattening</i></p> <p><u>10:55 Fadila Berrahma,</u> Khalida Ghanem and Hicham Bousbia-Salah. <i>A New Multi-user Spatial Modulation Scheme Combining STBC-OFDM and CDMA</i></p> <p><u>11:15 Mehdi Damou,</u> M. Chetioui, A. Boudkhal, S. Gouni, R. Bouhmidi and Bohafs Bouras. <i>Coupled Rectangular Waveguide Resonator Filter Using 3D-HFSS Based Admittance Extraction</i></p> <p><u>11:35 Mohammed Chetioui,</u> Abdelhakim Boudkhal, Damou Mehdi, Mansouri Boualem, Fatima Bouasria and Nasreddine Benahmed. <i>A MEMS Cone-shaped Helix Antenna for THz Applications Using ANN</i></p> <p><u>11:55 Ahmed Zitouni.</u> <i>C-shaped UWB Dielectric Resonator Antenna With Dual Band-Notched Characteristics for WLAN and X-Band Applications</i></p>

12:15-13:00: Awards and Closing of the IEEE ISPA 2022

Chairs: Pr Malika Mimi, Pr Abdelmalik Taleb Ahmed and Pr Abdeldjalil Ouahabi

13:00-14:00 Lunch Break