Conference Programme

Co-Chairs:
João Manuel R. S. Tavares (tavares@fe.up.pt)
Renato M. Natal Jorge (rnatal@fe.up.pt)
PROGRAMME

Tuesday, October 15

17:00 – 18:30 Early Registration

Wednesday, October 16

8:00 – 9:30 Registration

9:30 – 9:45 Welcome

9:45 – 10:30 Keynotes I

Chairpersons: Isabel Figueiredo, Daniela Jacoviello

Room I

11:00 – 11:15 Colonic Polyp Identification using Pareto Depth Anomaly Detection Algorithm
I.N. Figueiredo, M. Dodangeh, L. Pinto, P.N.Figueiredo, R. Tsai

11:15 – 11:30 Ultrasound Speckle Noise Reduction by Radio-frequency Data Filtering
V. Santo, F.C. Monteiro

11:30 – 11:45 A semi-automatic software for processing real-time phase-contrast MRI data
S. Fall, P. Liu, O. Baledent

11:45 – 12:00 Comparative Study of Dermoscopic Hair Removal Methods
L. Talavera-Martinez, P. Bilitoni, M. Gonzalez-Hidalgo

12:00 – 12:15 Biometric Identification based on Forearm Vein Pattern
R.S. Choras

12:15 – 12:30 A Hermite-based Method for Bone SPECT/CT Image Fusion with Prior Segmentation
L. Barba-J, L. Vargas-Quintero, J.A. Calderon, C.T. Moreno

10:30 – 11:00 Coffee Break

11:00 – 12:30 Oral Presentations

Room I

Chairpersons: Isabel Figueiredo, Daniela Jacoviello

11:00 – 11:15 Lower limb joint angle coordination assessment at sagittal plane on human vertical countermovement
C Rodrigues, MV Correia, JMCS Abrantes, J Nadal, MAB Rodrigues

11:15 – 11:30 Validation of whole-body COM movement from 3D anthropometric image with dynamic data at different human standard MVJ
C Rodrigues, MV Correia, JMCS Abrantes, J Nadal, MAB Rodrigues

11:30 – 11:45 Immersive Multiple Object Tracking using Virtual Reality - Pilot study on athletes and non sport-practicing subjects
A. Kibleur, M.L. Chenéchal, N. Benguigui, J. Chatel-Goldman

11:45 – 12:00 Benchmark RGB-D Gait Datasets: A Systematic Review
J.F. Nunes, P.M. Moreira, J.M.R.S. Tavares

12:00 – 12:15 GRIDDS - A Gait Recognition Image and Depth Dataset
J.F. Nunes, P.M. Moreira, J.M.R.S. Tavares

12:15 – 12:30 Using Augmented Reality in Patients with Autism: A Systematic Review
A. Marto, H. Almeida, A. Gonçalves

12:30 – 14:00 Lunch

14:00 – 14:45 Keynotes II Room I

14:45 – 16:30 Oral Presentations

Room I

Chairpersons: Inês Domingues, Ryszard Choras

14:45 – 15:00 Automatic Segmentation and Delineation of Intervertebral Discs on Lumbar Spine MR Images
W.T. Liu, A.R.S. Marcal

15:00 – 15:15 Layer thickness evaluation between medical imaging and additive manufacturing
H.A. Almeida, J. Vasco, M. Correia, R. Ruben

A. Lombardi, E. Lella, D. Diacono, N. Amoroso, A. Monaco, R. Bellotti, S. Tanguro

15:30 – 15:45 Craniofacial morphology of double reed instrument players and musical performance
M.P. Clemente, J. Mendes, A. Moreira, A.P. Ferreira, J.M. Amarante

15:45 – 16:00 Mimetic Finite Difference Methods for Restoration of Fundus Images for Automatic Glaucoma Detection

16:00 – 16:15 Space-adaptive anisotropic bivariate Laplacian regularization for image restoration
L. Calatrava, A. Lanza, M. Pragliola, F. Sgallari

16:15 – 16:30 Bone SPECT image segmentation based on the Hermite transform
L. Vargas-Quintero, L. Barba-J, J.A. Calderon, C.T. Moreno

16:30 – 17:00 Coffee Break
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<tr>
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**18:30** Welcome Port of Honour
Thursday, October 17

9:00 – 9:45
Keynotes III
Room I
Eye tracking and human computer interface
Daniela Iacoviello

09:45 – 10:30
Oral Presentations

Room I
Chairpersons:
Manuel González-Hidalgo, Lioele Gontard

09:45 – 10:00
Voxel-based computational tools help liver dosimetry calculations of multiple (external and internal) radiation therapies
P. Ferreira, F.P.M. Oliveira, R. Paratafa, P.S. Girão, P.L. Correia, O. Pares, D.C. Costa

10:00 – 10:15
Detection and automatic deletion of staples in images of wound of abdominal surgery for m-Health applications

10:15 – 10:30
Reconstruction of a defective finger joint surface and development of an adapted external fixator
L. Rase, S.C. Woodcock, G. Kullmer, B. Schramm, H.A. Richard

10:30 – 11:00
Coffee Break

11:00 – 12:30
Oral Presentations

Room I
Chairpersons:
Cristina Caridade, Luciano Oliveira

11:00 – 11:15
Toward an Affine Feature-based Registration Method for Ground Glass Lung Nodule Tracking
Y.K.B. Zikri, M. Helguera, N.D. Cahill, D. Shrier, C.A. Linte

11:15 – 11:30
Computer Aided Effective Prediction of Complete Responders after Radiochemotherapy Based on Tumor Regression Grade Estimated by MR Imaging
C. Loéquiao, S. Conforto, M. Schmid, G. Giunta, M. Rengo, D. Caruso, A. Laghi

11:30 – 11:45
Prediction of the Child’s Head Growth in the First Year of Life
W. Wolanski, E. Kawsleska, D. Larysz, M. Gzik, J. Gorwa, R. Michnik

11:45 – 12:00
Influence of mutual rotation of polarizing filters on light intensity measured with collagen fibres
M. Turčanová, M. Hirlo, P. Dvořák, J. Burša

12:00 – 12:15
A Tool for Building Multi-purpose and Multi-pose Synthetic Data Sets
M. Ruiz, J. Fontinele, R. Perrone, M. Santos, L. Oliveira

12:15 – 12:30
Alzheimer’s disease and the volume of hippocampal subfields: Cluster Analysis using neuroimaging data
C.G.F. Pachi, L. Torralbo, J.F. Yamamoto

12:30 – 14:00
Lunch

14:00 – 14:45
Keynotes IV
Room I
Imaging guidance for fetal interventions
Francisco Vasconcelos

14:45 – 15:30
Oral Presentations

Room I
Chairpersons:
Ana Gouveia, Wojciech Wolatski

14:45 – 15:00
Automated spinal midline delineation on biplanar X-rays using Mask R-CNN
Z. Yang, W. Skalli, C. Vergari, E.D. Angelini, L. Gajny

15:00 – 15:15
Automatic measurement of the volume of brain ventricles in preterm infants from 3D ultrasound datasets
L.C. Gontard, J. Pizarro, J. Benavente-Fernández, S.P. Lublán-López

15:15 – 15:30
Breast skin temperature evaluation in lactating and non-lactating women by thermography: an exploratory study
A. Gouveia, L. Pires, N. Garcia, A. Barboza, A. Jesus, N. Pombo, M. Soares, J. Martinez-de-Oliveira

15:30
Porto city guided tour

20:00
Farewell Dinner
Friday, October 18

9:00 – 10:30
Keynotes V & VI
Room I

Deep learning in retinal image analysis
Aurélio Campilho

Recent advances on medical-driven applications: case studies in computer-aided Barrett's esophagus and Parkinson's disease diagnosis
João Paulo Papa

10:30 – 11:00
Coffee Break

11:00 – 12:45
Oral Presentations

<table>
<thead>
<tr>
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<tbody>
<tr>
<td>11:00</td>
<td>Chairpersons: Luisa Sousa, Fethi Okyar</td>
<td>Chairpersons: H.A. Almeida, J.E. Ribeiro, R. Lima</td>
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<tr>
<td>11:15</td>
<td>Processing thermographic images for the pre diagnosis of breast cancer</td>
<td>Mechanical and Imaging Models-based Image Registration</td>
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<td></td>
<td>D. Granadillo, Y. Morales, E. Benjumea, C. Torres</td>
<td>K. Škardová, M. Rambausek, R. Chabinick, M. Genet</td>
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<tr>
<td>11:15</td>
<td>Perineal pressure in equestrians: application to pudendal neuralgia</td>
<td>Manufacturing process of a brain aneurysm biomodel in PDMS using rapid prototyping</td>
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<td>11:30</td>
<td>Influence of Transversal Resolution on Reconstructing Atherosclerotic Plaque Components</td>
<td>Red blood cells tracking and cell-free layer formation in a hyperbolic microchannel: a CFD model validation</td>
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<td>O. Lisicky, A. Malá, J. Buřša</td>
<td>M. Gracka, R. Lima, J.M. Miranda, Z. Ostrowski</td>
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<td>11:45</td>
<td>A semi-automatic parameter extraction process for modeling of lumbar vertebral body segments</td>
<td>Numerical characterization of a hyperelastic material to shear stress</td>
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<td>O. Güldeniz, V. Karadağ, A. F. Okyar</td>
<td>A.V. Souza, J.E. Ribeiro, F. Araújo</td>
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<td>12:00</td>
<td>3D-FEM Modeling of Ico-concentration Maps in Single Trabecula from Human Femur Head</td>
<td>Extracting clothing features for blind people using image processing and machine learning techniques: First Insights</td>
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<tr>
<td>12:15</td>
<td>Macromescale fracturation of osseous models</td>
<td>HARM - The Human Action Recognition Module</td>
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<td>F.D. Pérez Cano, J.J. Jiménez Delgado</td>
<td>B. Fernandes, G. Alag, S. Kumaar</td>
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<tr>
<td>12:30</td>
<td>Minimally Invasive Transforaminal Lumbar Interbody Fusion Surgery at Level L5-S1</td>
<td>Computational tools for accessing cell mechanical information within 3D in vitro angiogenesis</td>
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12:45 – 13:00
Closing
Room I

13:00 – 14:30
Lunch
SOCIAL PROGRAMME

Wednesday, October 16

18h30 – Welcome Port of Honour
Axis Vermar Conference & Beach Hotel – Hotel bar

Thursday, October 17

15h30 – Bus departure from Axis Vermar Conference & Beach Hotel

16h00 – Porto city guided tour

19h30 – **Arrive to Caves Cálem**, begin of the **guided tour**

20h00 – **Welcome Cocktail**

20h30 – **Dinner service**

22h30 – **Return to** Axis Vermar Conference & Beach **Hotel**
Conference Venue

Axis Vermar Conference & Beach Hotel
Rua da Imprensa Regional
4490-518 Póvoa de Varzim
PORTUGAL
Tel.: +351 252 298 900

GPS Coordinates
Latitude: 41° 23' 27.4482" N
Longitude: -8° 46' 23.5194" W

Conference Rooms

Oral sessions: Room I – “Eça de Queirós” & Room II – “Estela” room
Coffee-breaks: Hotel bar
Lunches: Hotel restaurant

Wireless Internet

Network ID: Hotel Axis Vermar
User: axisvermar
Password: axisvermar
PORTO CITY
Overlooking the Douro River, Porto is one of the most ancient European cities. It was born and developed from the northern bank of this river during the Middle Ages. One of the most significant aspects of Porto and its historical centre is its landscape, combining harmony with the urban structure and presenting a frame of rare beauty. The city was classified as World Heritage by UNESCO in 1996 and the Best destination in Europe in 2014.

When discovering Porto, you will find many surprises. Besides its welcoming and conservative environment, Porto is also contemporary and artistic. This is shown not only in the streets, architecture, monuments and museums but also in the terraces, restaurants and leisure and shopping areas.

The people
Porto is proud to be known as the city of work. Actually, its inhabitants have always been in the front line to defend national causes and greatly contributed to the Discoveries as well as to the regions’ economic development as one of the most dynamic areas in the country’s entrepreneurial tissue. The roughness of hard work, however, is counter-balanced by the honest and hospitable spirit of its people. The dynamism of the Porto population reveals their passion for simple things, which gives them an authentic and respectable image.

Useful Links
http://visitporto.travel/Visitar/Paginas/default.aspx
https://www.visitportugal.com/en

Climate
Porto enjoys a very mild climate year-round.
Average Air Temperatures:

Shopping
Traditional Commerce in the city centre is open everyday except on Sunday. The best shopping areas are Santa Catarina, 31 de Janeiro and Cedofeita streets, along with the narrow streets going up and down between the city centre and Ribeira (the riverside historical area).
Several shopping centres, in Porto and around it, are open everyday until 23h00. Besides the major international franchising and brands, national textiles, leather, pottery, shoes, crystal, wines and gold handcraft can be found in the shops at excellent value.

Opening hours and timetables
Banks
Mon. to Fri. 8.30 - 15.00 (some until 18.00)
Shops
Mon. to Fri. 9.00 - 13.00 / 15.00 - 19.00, Sat. 9.00 - 13.00
Shopping Centres
Daily 10.00 - 23.00

Restaurants
Prices round 10€ > 60€ per person
Lunch 12.00 - 15.00 / Dinner 19.30 - 23.00
Please click here to see a list of all restaurants in the city or visit the site http://visitporto.travel/Visitar/Paginas/default.aspx
Chemists
Mon. to Fri. 9.00 - 13.00 / 15.00 - 19.00
Sat. 9.00 - 13.00
At night, Saturday afternoons and Sundays some chemists are open - call 118.

Public services
9.30 - 12.30 / 14.00 - 16.30 (some until 17.30)

Post Offices
Mon. to Fri. 8.30 - 18.00 / Airport - 24h a day

Local time
The local time in Porto is the Greenwich Time - the same as in London and one hour difference with the major European cities like Madrid, Rome, Paris, Brussels, etc.

Currency
The local currency is the Euro (€). Credit Cards - All major credit cards are accepted.

Electricity
220 V/ 50 Hz. - Location

HOST CITY - PÓVOA DE VARZIM
Póvoa de Varzim is a Portuguese city in Northern Portugal and a sub-region of Greater Porto. It sits in a sandy coastal plain, a cuspate foreland, halfway between the Minho and Douro rivers. The population of the municipality was 63,408 at the time of the 2011 census. The city expanded, southwards, to Vila do Conde, and there are about 100,000 inhabitants in the urban area alone. It is the seventh largest urban agglomeration in Portugal and the third largest in Northern Portugal. Permanent settlement in Póvoa de Varzim dates back to around four to six thousand years ago; around 900 BC, unrest in the region led to the establishment of Cividade de Terroso, a fortified city, which developed maritime trade routes with the civilizations of Classical antiquity. Modern Póvoa de Varzim emerged after the conquest by the Roman Republic of the city by 138 BC, fishing and fish processing units soon developed, which turned out to be the foundations of the local economy. By the 11th century, the fish industry and fertile farmlands were the economic base of a feudal lordship and Varzim was fiercely disputed between the local overlords and the early Portuguese kings, which resulted in the establishment of the present day's municipality in 1308 and being subdued to monastic power some years later. Póvoa de Varzim's importance reemerged with the Age of Discovery due to its shipbuilders and merchants proficiency and wealth, who traded around the globe in complex trade routes. By the 17th century, the fish processing industry rebounded and, sometime later, Póvoa became the dominant fishing port in northern Portugal. Póvoa de Varzim has been a well-known beach resort for over three centuries, the most popular in Northern Portugal, which unfolded an influential literary culture and artistic patronage in music and theater. Póvoa de Varzim is one of the few legal gambling areas in Portugal, and has significant textile and food industries. The town has retained a distinct cultural identity and ancient customs such as the writing system of siglas poveiras, the masseira farming technique and festivals.

Getting around Póvoa de Varzim
Póvoa de Varzim is served by a transportation network that employs maritime, aerial and terrestrial travel. The terrestrial access infrastructure is composed of national motorways (freeways), the national roads system, and light rail metro. These infrastructures and the airport, bus terminal, marina and harbour are daily used by commuters.

Public transportation within the city is provided by private-owned companies. The Central de Camionagem is a terminus for urban and long distance buses that provide mass transit in the surrounding region, namely the city's countryside, Porto, Minho Region, and Galicia in Spain. Litoral
Norte as a wholly urban transportation network with 5 lines, while Linhares has the oldest bus network operating in the city, now owned by Transdev.

The Francisco Sá Carneiro Airport (LPPR, better known as Porto Airport) is located 18 km (11 mi) south of the city. It is one of the busiest international airports in Portugal and serves all Greater Porto. Póvoa Aerodrome, officially known as S. Miguel de Laundos, is small-sized, with only 270 meters long for ultralight aviation and other small planes.

Line B of Porto Metro links Póvoa de Varzim to Porto and the airport with two services: a standard and a shuttle (the Expresso); through Verdes station, Metro trains link the city and the airport.

The city is connected by road on a north-south axis from Valença, Viana do Castelo, and Esposende to Porto by the A28 motorway. It is also reached by the A7 (from Guimarães and Vila Nova de Famalicão) and A11 (from Braga and Barcelos) motorways on an east-west axis, through the south and north of the city, in that order, and both cross the A28. Although it lost usefulness for average and long distances, the National Roads system has acquired municipal interest: EN13 that cuts the city in half, in a north-south direction, is used by commuters originating from the northern suburbs and from the city of Vila do Conde, in the south, to travel downtown. The EN205 and the EN206 are used by commuters starting from the interior of the municipality.

The traditional road system of the city, composed of roads that run parallel in the direction of the sea, can be seen in any of the following avenues: Avenida do Mar, Avenida Vasco da Gama, Avenida Mouzinho de Albuquerque, and Avenida Santos Graça. The Avenida dos Descobrimentos and Avenida dos Banhos, in other hand, run parallel to the coast. The growth of the city inland and northwards made ring roads more important, this can be seen in Avenida 25 de Abril, an urban belt road.