ICPRAI 2022

3rd International Conference on Pattern Recognition and Artificial Intelligence

Paris
1 – 3 June 2022

PROGRAM

Sciences
Université Paris Cité

Welcome to ICPRAI 2022

Welcome to the third International Conference on Pattern Recognition and Artificial Intelligence (ICPRAI 2022) organized in 2022 in Paris, endorsed by IAPR.

We can remember here the genesis of this cycle of conferences. It was initiated in 2018 in Montréal by Professor Ching Y. Suen and CENPARMI to mark its 30th Anniversary. This ICPRAI edition has gathered renowned researchers of different domains and making the link between the image community and Artificial Intelligence community. Thank you to them all. The success of the meeting led Professor Ching Y. Suen to organize a second edition of the conference in 2020 in Zhongshan City, China. The worldwide sanitary situation obliged to organize a virtual on-line conference.

This year, we are pleased and honored to welcome you in Paris in the third edition of the ICPRAI conferences. It will be held in a hybrid way. We have chosen to replace poster sessions by short presentations enabling an easier contact between on-site and on-line participants.
The conference will benefit from three keynote talks, 98 oral presentations that are divided in 40 long presentations and 39 short presentations in the main track. They are completed by 19 presentations in three special sessions.

The main conference is following a doctoral consortium, open to all participants. It gathers 13 students with their mentors.

We wish all the attendees a memorable participation in the conference and the events that are hosted by the conference giving the attendees opportunities to discuss the future trends of their research.

At this time, it is a pleasure for me to thank all the people who contributed to the organization both on the scientific and organizational levels. A special mention goes to Florence Cloppet, Camille Kurtz and Aurélie Richard.

Enjoy the conference and have a pleasant stay in Paris.

<div align="right">

Prof. Nicole VINCENT
Université Paris Cité
ICPRAI 2022 General chair

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VENUE

The conference is organized on the site 'Cordeliers' of Université Paris Cité in the Quartier Latin in Paris - 15, rue de l'École de Médecine, 75006 Paris, France

A : : ODEON subway station / **B :** : 15, rue de l'École de Médecine,

Conference Location Map
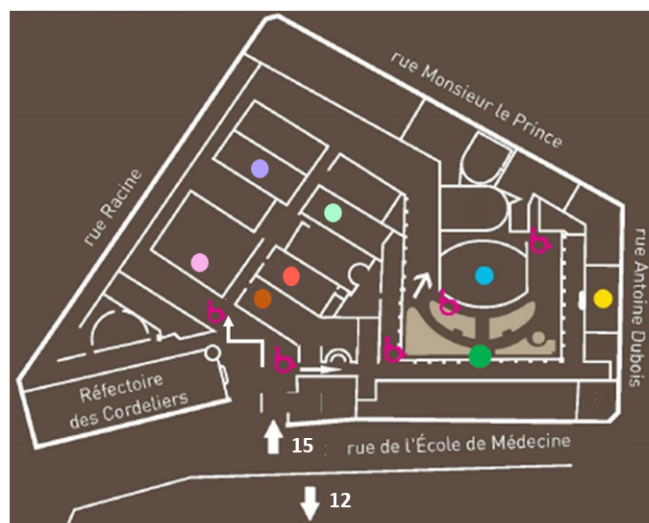
- Amphi Farabeuf
- Salle Marie Curie
- Cloître (Cloister) / Garden
- Pavillon 1 – Ground Floor
- Pavillon 2 – Ground Floor
- Pavillon 4 – Ground Floor
- Amphi Frezal – 3rd Floor
- Amphi Portier – 3rd Floor

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SOCIAL EVENTS

On June 1st
at 18h
Concert '**Music meets Science**' by F. Pineau-Benois and M. Drobinsky
Cocktail in the 'Grand Hall' of Université Paris Cité
12, rue de l'École de Médecine, 75006 Paris
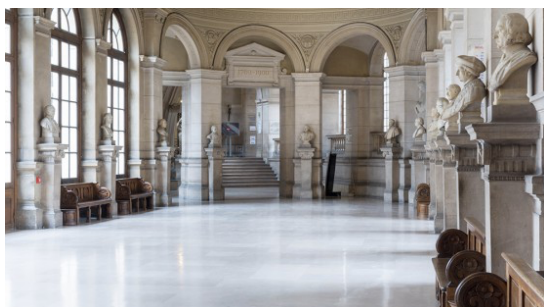
On June 2nd
at 18h30 departure of the **Cruise on river Seine**
21, Quai de Montebello, 75005 Paris

A : : 15, rue de l'École de Médecine / **B :** : 21, quai de Montebello, cruise departure

at 20h Gala dinner 'Chez Françoise' restaurant
Aérogare des Invalides, 75007 Paris

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PRACTICAL INFORMATION

REGISTRATION and WELCOME DESK

Conference staff will be pleased to assist all participants during the conference

Opening hours – Pavillon 2
Tuesday May 31st 18h - 19h
Wednesday June 1st 8h – 17h
Thursday June 2nd 8h – 17h
Friday June 3rd 8h – 17h

The Message board is located in the Registration Area in pavillon 2. There you may leave a message for your friends or colleagues.

Registration includes
- Attendance in the technical program on Wednesday, Thursday and Friday
- Lunches and coffee breaks
- Attendance in the Doctoral Consortium
- Attendance in the social events

Wi-Fi
Free Internet Wi-Fi will be available in the rooms during the whole conference. Login and pwd will be provided in the conference participant kit.

Mobile Phones
Delegates are kindly requested to switch off their mobile phones during the sessions.

Smoking Policy
Smoking is not allowed inside the building and in all public places.

Currency
The official currency of the France is the Euro(€). International credit cards are accepted for payments in most hotels, restaurants and shops. ATM machines are easily available throughout the city.

Insurance
The organizers of the Conference do not accept liability for any injury, loss or damage, arising from accidents or other situations during, or as a consequence of the Conference. Participants are therefore advised to arrange insurance for health and accident prior to travelling to the Conference.

Language
The official language of the Conference is English. Simultaneous interpretation is not provided.

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Program at a Glance

	1st June 2022	
	1st June 2022	
8h30	Welcome - registration	Hall
9h	Opening	Amphi Farabeuf
9h30	Session 1 Deep learning 1	Amphi Farabeuf
	Space-Time Memory networks for multi-person skeleton body part detection, *Rémi Dufour, Cyril Meurie, Olivier Lezoray and Ankur Mahtani* Covid-19 Vaccine Sentiment Analysis during Second Wave in India by Transfer Learning using XLNet, *Anmol Bansal, Seba Susan, Arjun Choudhry and Anubhav Sharma* Modular StoryGAN with Background and Theme Awareness for Story Visualization, *Gábor Szűcs and Modafar Al-Shouha* Multi-view Monocular Depth and Uncertainty Prediction with Deep SfM in Dynamic Environments, *Christian Homeyer, Oliver Lange and Christoph Schnörr*	Eric Granger
11h	Coffee break	Salle Marie Curie
11h30	Session 2 Neural networks	Amphi Farabeuf
	On the Feasibility and Generality of Patch-based Adversarial Attacks on Semantic Segmentation Problems, *Soma Kontár and András Horváth* Pruning Neural Nets by Optimal Neuron Merging, *Felix Goldberg, Yackov Lubarsky, Alexei Gaissinski, Dan Botchan and Pavel Kisilev* DRN: Detection and Removal of Noisy Instances with Self Organizing Map, *Rashida Hasan and Cheehung Henry Chu* One-shot Decoupled Face Reenactment with Vision Transformer, *Chen Hu and Xianghua Xie*	Bidyut B. Chaudhuri
12h45	Lunch	Salle Marie Curie
14h	Keynote **Robert B. Fisher**: The TrimBot2020 outdoor gardening robot	Amphi Farabeuf Nicole Vincent
15h15	Session 3A Deep learning 2	Amphi Farabeuf
	Hypercomplex Generative Adversarial Networks for Lightweight Semantic Labeling, *Giorgos Sfikas, George Retsinas, Basilis Gatos and Christophoros Nikou* Identifying, Evaluating, and Addressing Nondeterminism in Mask R-CNNs, *Stephen Price and Rodica Neamtu* Visual Radial Basis Q-Network, *Julien Hautot, Céline Teulière and Nourddine Azzaoui*	Véronique Eglin
15h15	Session 3B Image Analysis 1	Amphi Frézal
	Application of Rail Segmentation in The Monitoring of Autonomous Train's Frontal Environment, *Mohamed Amine Hadded, Ankur Mahtani, Sébastien Ambellouis, Jacques Boonaert and Hazem Wannous* Attention Embedding ResNet for Pest Classification, *Jinglin Wu, Shiqi Liang, Ning Bi and Jun Tan* Inpainting Applied to Facade Images: a Comparison of Algorithms, *Willy Fritzsche, Steffen Goebbels, Simon Hensel, Marco Rußinski and Nils Schuch*	Camille Kurtz
16h	Coffee break	Salle Marie Curie

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16h30	Session 4 Machine learning	Amphi Farabeuf
	Unsupervised Representation Learning Via Information Compression, *Zezhen Zeng, Jonathon Hare and Adam Prügel-Bennett*	Mounîm El Yacoubi
	Bayesian Gate Mechanism for Multi-Task Scale Learning, *Shihao Wang and Hongwei Ge*	
	Self-Distilled Self-Supervised Depth Estimation in Monocular Videos, *Julio Mendoza and Helio Pedrini*	
18h15	Cocktail – concert 'Music meets Science' by F. Pineau-Benois and M. Drobinsky	

Prof. Robert (Bob) Fisher
School of Informatics, University of Edinburgh, Scotland, UK

Brief Bio

Prof. Robert B. Fisher FIAPR, FBMVA received a BS (Mathematics, California Institute of Technology, 1974), MS (Computer Science, Stanford, 1978) and a PhD (Edinburgh, 1987). Since then, Bob has been an academic at Edinburgh University, including being College Dean of Research. He has been the Education Committee and Industrial Liaison Committee chair for the Int. Association for Pattern Recognition, of which he is currently the association Treasurer. His research covers topics mainly in high level computer vision and 3D and 3D video analysis, focussing on reconstructing geometric models from existing examples, which contributed to a spin-off company, Dimensional Imaging. The research has led to 5 authored books and 300 peer-reviewed scientific articles or book chapters. He has developed several on-line computer vision resources, with over 1 million hits. Most recently, he has been the coordinator of EC projects 1) acquiring and analysing video data of 1.4 billion fish from over about 20 camera-years of undersea video of tropical coral reefs and 2) developing a gardening robot (hedge-trimming and rose pruning). He is a Fellow of the Int. Association for Pattern Recognition (2008) and the British Machine Vision Association (2010).

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2nd June 2022		
8h30	Session 5A Deep learning 3	Amphi Frézal
	Understanding Individual Neurons of ResNet Through Improved Compositional Formulas, *Rafael Harth* Towards a Unified Benchmark for Monocular Radial Distortion Correction and the Importance of Testing on Real-World Data, *Christoph Theiß and Joachim Denzler* Visual Microfossil Identification via Deep Metric Learning, *Tayfun Karaderi, Tilo Burghardt, Allison Y. Hsiang, Jacob Ramaer and Daniela N. Schmidt* Guiding Random Walks by Effective Resistance for Effective Node Embedding, *Abderaouf Gacem, Mohammed Haddad, Hamida Seba, Gaetan Berthe and Michel Habib*	Charlotte Pelletier
8h30	Session 5B Image Analysis 2	Amphi Portier
	ASRSNet: Automatic Salient Region Selection Network for Few-Shot Fine-Grained Image Classification, *Yi Liao, Weichuan Zhang, Yongsheng Gao, Changming Sun and Xiaohan Yu* ConDense: Multiple Additional Dense Layers with Fine-grained Fully-connected Layer Optimisation for Fingerprint Recognition, *Dane Lang and Dustin Van Der Haar* Hierarchical approach for the classification of multi-class skin lesions based on deep convolutional neural networks, *Samia Benyahia, Meftah Boudjelal and Olivier Lezoray* Ordinal classification and regression techniques for distinguishing neutrophilic cell maturity stages in human bone marrow, *Philipp Gräbel, Martina Crysandt, Barbara M. Klinkhammer, Peter Boor, Tim H. Brümmendorf and Dorit Merhof*	Romain Giot
9h30	**Keynote** **Walter G. Kropatsch** : Controlling Topology-Preserving Graph-Pyramid	Amphi Frézal Mounîm El Yacoubi
10h30	Coffee break	
11h	Session 6A Deep learning 4	Amphi Frézal
	Deep Learning for Fast Segmentation of E-waste Devices' Inner Parts in a Recycling Scenario, *Cristof Rojas, Erwan Renaudo and Antonio Rodríguez-Sánchez* Lip-based Identification using YOLOR, *Wardah Farrukh and Dustin Van Der Haar* Lateral Ego-Vehicle Control without Supervision using Point Clouds, *Florian Müller, Qadeer Khan and Daniel Cremers*	Jiang Xiaoyi
11h	Session 6B Multimodal image processing	Amphi Portier
	A Framework for Registration of Multi-modal Spatial Transcriptomics Data, *Yu Qiang, Karl Rohr, Shixu He, Renpeng Ding, Yan Zhou, Kailong Ma and Yong Hou* A Sensor-Independent Multimodal Fusion Scheme for Human Activity Recognition, *Anastasios Alexiadis, Alexandros Nizamis, Dimitrios Giakoumis, Konstantinos Votis and Dimitrios Tzovaras* Generative Target Update for Adaptive Siamese Tracking, *Madhu Kiran, Le Thanh Nguyen-Meidine, Rajat Sahay, Rafael Menelau Oliveira E Cruz, Louis-Antoine Blais-Morin and Eric Granger*	Walter Kropatsch

Prof. Walter Kropatsch
Vienna University of Technology Austria
Title of the Keynote: Controlling Topology-Preserving Graph-Pyramid

Brief Bio

From 1990-2021 Walter G. Kropatsch was full professor at TU Wien. He received his diploma degree in Technical Mathematics from the Technical University in Graz. He then moved to Grenoble, France to get the Maître d'Informatique from the University of Grenoble. His PhD in 1982 was on the "Registration of Satellite Images with Maps". In 1984 he was invited by Prof. Azriel Rosenfeld to spend a year at the Center for Automation Research of the University of Maryland. The creation of the first group in Austria dealing with pattern recognition and image processing in 1990 was jointly coordinated with the Austrian Association of Pattern Recognition (AAPR), that he initiated and led from 1984 until 1995. Under his leadership the AAPR became a member of the International Association of Pattern Recognition (IAPR) in which he held several leading positions, 2004-2006 he was its president. In 1996 he organized the main conference of the IAPR, the International Conference of Pattern Recognition in Wien, Austria. His scientific research focuses on pyramidal representations of images since his collaboration with Azriel Rosenfeld in 1984/85. The current graph-based pyramids follow similar concepts with the advantage that graphs are much more flexible data structures than the regular grids as currently used as architectures in deep learning. In his more than 400 scientific contributions many other concepts and applications have been addressed. He is currently senior editor of the journal of Electronic Imaging, and associate editor the journal of the Visual Computer and of several special issues in Pattern Recognition and Pattern Recognition Letters.

12h	Lunch	
13h15	Session 7A Image generation	Amphi Frézal
	GANs based Conditional Aerial Images Generation for Imbalanced Learning, *Itzel Belderbos, Tim de Jong and Mirela Popa*

Compositing Foreground and Background Using Variational Autoencoders, *Zezhen Zeng, Jonathon Hare and Adam Prügel-Bennett*

Face Age Progression with Attribute Manipulation, *Sinzith Tatikonda, Athira Nambiar and Anurag Mittal*

Visual Transformer-based Models: A Survey, *Xiaonan Huang, Ning Bi and Jun Tan*

Controlling the quality of GAN-based generated images for Predictions Tasks, *Hajar Hammouch, Mounim El-Yacoubi, Huafeng Qin, Hassan Berbia and Mohamed Chikhaoui* | Stephen Smith |
| 13h15 | Session 7B eXplainable Artificial Intelligence | Amphi Portier |
| | Explaining Image Classifications with Near Misses, Near Hits and Prototypes - Supporting Domain Experts in Understanding Decision Boundaries, *Marvin Herchenbach, Dennis Müller, Stephan Scheele and Ute Schmid*

Multi Layered Feature Explanation Method for Convolutional Neural Networks, *Luca Bourroux, Jenny Benois-Pineau, Romain Bourqui and Romain Giot*

Discriminatory Expressions to Improve Model Comprehensibility in Short Documents, *Manuel Francisco and Juan Luis Castro*

Metrics for saliency map evaluation of deep learning explanation methods, *Tristan Gomez, Thomas Fréour and Harold Mouchère* | Romain Giot |
| 14h30 | Session 8 Segmentation / Classification 1 | Amphi Frézal |
| | DR-VNet: Retinal Vessel Segmentation via Dense Residual UNet, *Ali Karaali, Rozenn Dahyot and Donal J. Sexton*

Dealing with incomplete land-cover database annotations applied to satellite image time series semantic segmentation, *Lucas Colomines, Camille Kurtz, Anne Puissant and Nicole Vincent*

A Hierarchical Prototypical Network for Few-Shot Remote Sensing Scene Classification, *Manal Hamzaoui, Laetitia Chapel, Minh-Tan Pham and Sébastien Lefèvre* | Harold Mouchère |
| 14h30 | **Special Session**: Medical Applications of Pattern Recognition and AI | Amphi Portier |
| | Analysing the Impact of Vibrations on Smart Wheelchair Systems and Users,*Elhassan Mohamed, Konstantinos Sirlantzis and Gareth Howells*

Deep Reinforcement Learning for Autonomous Navigation in Robotic Wheelchairs, *Sotirios Chatzidimitriadis and Konstantinos Sirlantzis*

Fusing AutoML Models: A Case Study in Medical Image Classification, *Melissa R. Dale, Arun Ross and Erik M. Shapiro*

Towards Automated Monitoring of Parkinson's Disease Following Drug Treatment, *Amir Dehsarvi, Jennifer Kay South Palomares and Stephen Leslie Smith*

Improving UWB image reconstruction for breast cancer diagnosis by doing an iterative analysis of radar signals, *Raquel Esperanza Patiño* | Gareth Howells |

	Escarcina and Henrry Adrian Torres Quispe 3D Reconstruction of Medical Image Based on Improved Ray Casting Algorithm, *Yu Wang and Ning Gong* Extracting and Classifying Salient Fields of View From Microscopy Slides of Tuberculosis Bacteria, *Marios Zachariou, Ognjen Arandjelović, Evelin Dombay, Wilber Sabiiti, Bariki Mtafya and Derek James Sloan* A Deep Learning Approach to Detect Ventilatory Over-Assistance, *Emmanouil Sylligardos, Markos Sigalas, Stella Soundoulounaki, Katerina Vaporidi and Panos Trahanias* Encoding sensors' data into images to improve the activity recognition in post stroke rehabilitation assessment, *Issam Boukhennoufa, Xiaojun Zhai, Victor Utti, Jo Jackson and Klaus Mcdonald-Maier*	
15h30	Coffee break	
16h	**Special session**: Time Series analysis	Amphi Frézal
	The FreshPRINCE: A Simple Transformation Based Pipeline Time Series Classifier, *Matthew Middlehurst and Anthony Bagnall* Temporal disaggregation of the cumulative grass growth, *Thomas Guyet, Laurent Spillemaecker, Simon Malinowski and Anne-Isabelle Graux* Feature Subset Selection for Detecting Fatigue in Runners using Time Series Sensor Data, *Bahavathy Kathirgamanathan, Cillian Buckley, Brian Caulfield and Padraig Cunningham* Stochastic pairing for contrastive anomaly detection on time series, *Guillaume Chambaret, Frédéric Bouchara, Laure Berti Equille, Emmanuel Bruno, Vincent Martin and Fabien Chaillan* Random Dilated Shapelet Transform: A new approach for time series shapelets, *Antoine Guillaume, Christel Vrain and Wael Elloumi* TS-QUAD: A Smaller Elastic Ensemble For Time Series Classification With No Reduction In Accuracy, *Jason Lines and George Oastler*	Charlotte Pelletier / Maxime Devanne / Germain Forestier / Jonathan Weber
18h45	Cruise on river Seine	
20h	Gala	

3rd June 2022		
8h30	Session 9A Text/Document processing	Amphi Frézal
	An Encoder-Decoder Approach to Offline Handwritten Mathematical Expression Recognition with Residual Attention, *Qiqiang Lin, Chunyi Wang, Ning Bi, Ching Y Suen and Jun Tan* RDMMLND: A New Robust Deep Model for Multiple License Plate Number Detection in Video, *Amish Kumar, Shivakumara Palaiahnakote and Umapada Pal* A New Deep Fuzzy based MSER Model for Multiple Document Images Classification, *Kunal Biswas, Shivakumara Palaiahnakote, Sittravell Sivanthi, Umapada Pal, Yue Lu, Cheng-Lin Liu and Mohamad Nizam Bin Ayub*	Laurence Likforman
8h30	Session 9B Graph matching and retrieval	Pavillon 4
	Augment Small Training Sets Using Matching-Graphs, *Mathias Fuchs and Kaspar Riesen* QAP Optimisation with Reinforcement Learning for Faster Graph Matching in Sequential Semantic Image Analysis, *Jérémy Chopin, Jean-Baptiste Fasquel, Harold Mouchère, Rozenn Dahyot and Isabelle Bloch* UGQE : Uncertainty Guided Query Expansion, *Firat Oncel, Mehmet Aygün, Gulcin Baykal and Gozde Unal*	Camille Kurtz
9h45	Keynote **Bidyut B. Chaudhuri:** Bengali Handwriting Recognition with transformative Generative Adversarial Net (TGAN)	Amphi Frézal Ching Suen
10h45	Coffee break	
11h15	Session 10A Medical imaging	Pavillon 4
	Fourier Domain CT Reconstruction with Complex Valued Neural Networks, *Zoltán Domokos and László G. Varga* Unsupervised Cell Segmentation in Fluorescence Microscopy Images via Self-supervised Learning, *Carola Krug and Karl Rohr* An Oculomotor Digital Parkinson Biomarker From a Deep Riemannian Representation, *Juan Olmos, Antoine Manzanera and Fabio Martínez*	Isabelle Bloch
11h15	Session 10B Deep learning 5	Amphi Frézal
	Shop Signboards Detection using the ShoS Dataset, *Mrouj Almuhajri and Ching Y. Suen* Structure-Aware Photorealistic Style Transfer using Ghost Bottlenecks, *Nhat-Tan Bui, Ngoc-Thao Nguyen and Xuan-Nam Cao* Momentum Residual Embedding with Angular Marginal Loss for Plant Pathogen Biometrics, *Shitala Prasad, Pankaj Pratap Singh and Piyush Kumar*	Xie Xianghua

Prof. Bidyut Baran Chaudhuri
Computer Vision & Pattern Recognition Unit, Indian Statistical Institute India
Title of the Keynote: Bengali Handwriting Recognition with transformative Generative
Adversarial Net (TGAN)

Brief Bio

Prof. Bidyut Baran Chaudhuri (LF'15) received the B.Tech. and M.Tech. degrees from Calcutta University, Kolkata, India, in 1972 and 1974, respectively, and the Ph.D. degree from the Indian Institute of Technology Kanpur, Kanpur, India, in 1980. He retired as the Head of the Computer Vision and Pattern Recognition Unit, Indian Statistical Institute, Kolkata, in December 2015, where he was an INAE Distinguished Professor and a J. C. Bose Fellow until December 2018. He is currently the Pro Vice-Chancellor (Academics) with Techno India University, Kolkata. From 1981 to 1982, he was a Post-Doctoral Fellow with Queen's University Belfast, Belfast, U.K., as a Leverhulme Overseas Fellow. He was also a Visiting Faculty with the University of Hanover, Hanover, Germany, from 1987 to 1988 as well as a GSF (currently, Leibnitz Institute) in 1985, 1990, and 1992. In 1978, he joined the Indian Statistical Institute as a Regular Faculty Member. During his tenure, he acted as a UNDP KBCS Project Coordinator from 1992 to 1994, a Jawaharlal Nehru fellow from 2002 to 2004, and did held several other honorable positions. He has published 425 research papers and 6 technical books. His current research interests include pattern recognition, image processing, computer vision, speech language processing, OCR, and machine learning. Prof. Chaudhuri is an Associate Editor of the International Journal of Document Analysis and Recognition and the International Journal of Pattern Recognition and Artificial Intelligence. He served as an Associate Editor of Pattern Recognition and Pattern Recognition Letters. He is a fellow of the International Association for Pattern Recognition, Third World Academy of Science, Indian National Science Academy, National Academy of Science, Indian National Academy of Engineering, West Bengal Academy of Science and Technology, and Optical Society of India. Prof. Chaudhuri is a Life Fellow of IEEE, world's biggest Engineering Society/Institute.

12h15	Lunch	
13h30	Session 11A Information extraction	Amphi Frézal
	From Synthetic to One-shot Regression of Camera-Agnostic Human Performances, *Julian Habekost, Kunkun Pang, Takaaki Shiratori and Taku Komura* Robot Path Planning Method Based on Improved Grey Wolf Optimizer, *Yilin Su, Yongsheng Li, Lina Ge and Minjun Dai* Progressive Clustering: An Unsupervised Approach Towards Continual Knowledge Acquisition of Incremental Data, *Akshaykumar Gunari, Shashidhar Kudari, Ramesh Ashok Tabib and Uma Mudenagudi* An overview of methods and tools for extraction of knowledge for COVID-19 from knowledge graphs, *Mariya Evtimova-Gardair and Nédra Mellouli-Nauwynck* Improving drift detection by monitoring ShapleyLoss values, *Bastien Zimmermann and Matthieu Boussard* Informativeness In Twitter Textual Contents For Farmer-centric Plant Health Monitoring, *Shufan Jiang, Rafael Angarita, Stéphane Cormier, Julien Orensanz and Francis Rousseaux*	Antoine Manzanera
13h30	Session 11B NLP / Text recognition	Pavillon 4
	Application of A* to the Generalized Constrained Longest Common Subsequence Problem with many Pattern Strings, *Marko Djukanovic, Dragan Matic, Christian Blum and Aleksandar Kartelj* Malware Detection Using Pseudo Semi-Supervised Learning, *Upinder Kaur, Xin Ma, Richard Voyles and Byung-Cheol Min* Using Convolutional Neural Network to Handle Word Shape Similarities in Handwritten Cursive Arabic Scripts of Pashto Language, *Muhammad Ismail Shah and Ching Y. Suen* Extraction of entities in health domain documents using recurrent neural networks, *Erick Barrios González, Mireya Tovar Vidal, Guillermo De Ita Luna and Jose Alejandro Reyes Ortiz* Is on-line handwriting gender-sensitive? what tells us a combination of statistical and machine learning approaches, *Laurence Likforman-Sulem, Gennaro Cordasco and Anna Esposito* Scene Text Recognition: An Overview, *Shiqi Liang, Ning Bi and Jun Tan*	Vincent Poulain d'Andecy
14h45	Session 12 A Segmentation / Classification 2	Amphi Frézal
	Remote sensing scene classification based on covariance pooling of multi-layer CNN features guided by saliency maps, *Sara Akodad, Lionel Bombrun, Christian Germain and Yannick Berthoumieu* Image Classification via Multi-Branch Position Attention Network, *Ke Zhang, Jun Yang, Kun Yuan, Qing-Song Wei and Si-Bao Chen* Robust detection of conversational groups using a voting scheme and a memory process, *Victor Fortier, Isabelle Bloch and Catherine Pélachaud*	Jenny Benois-Pineau

14h45	Session 12 B Transformer and feature computation	Pavillon 4
	Seeking attention: Using full context transformers for better disparity estimation, *Nadir Bengana, Janne Mustaniemi and Janne Heikkilä* Computation of 2D Discrete Geometric Moments through Inclusion-Exclusion, *Lidija Comic and Paola Magillo* Hologram detection for identity document authentication, *Oumayma Kada, Camille Kurtz, Cuong Van Kieu and Nicole Vincent*	Florence Cloppet
15h45	Coffee break	
16h15	Session 13 Object detection / pose estimation	Amphi Frézal
	Comparing artificial intelligence algorithms in computer vision: the weapon detection benchmark, *Paolo Giglio, Vincenzo Dentamaro, Donato Impedovo and Giuseppe Pirlo* Comparative Study of Activation Functions and their Impact on the YOLOv5 Object Detection Model, *John Doherty, Bryan Gardiner, Nazmul Siddique, Emmett Kerr and Sunilkumar Manvi* Adaptive threshold for anomaly detection in ATM radar data streams, *Achraf Krim Rahaoui, Théobald De Riberolles and Jiefu Song* PE-former: Pose Estimation Transformer, *Paschalis Panteleris and Antonis Argyros* ADG-Pose: Automated Dataset Generation for Real-World Human Pose Estimation, *Ghazal Alinezhad Noghre, Armin Danesh Pazho, Justin Sanchez, Nathan Hewitt, Christopher Neff and Hamed Tabkhi* Personalized Frame-level Facial Expression Recognition in Video, *Andrey Savchenko*	Antoine Tabbone
16h15	**Special Session**: Graphs for Pattern Recognition: Representations, Theory and Applications	Pavillon 4
	Learning Document Graphs with Attention for Image Manipulation Detection, *Hailey James, Otkrist Gupta and Dan Raviv* Improving semantic segmentation with graph-based structural knowledge, *Jérémy Chopin, Jean-Baptiste Fasquel, Harold Mouchère, Rozenn Dahyot and Isabelle Bloch* Interpolation Kernel Machine and Indefinite Kernel Methods for Graph Classification, *Jiaqi Zhang, Cheng-Lin Liu and Xiaoyi Jiang* Parallel O(log(n)) Computation of the Adjacency of Connected Components, *Majid Banaeyan and Walter G. Kropatsch*	Walter G. Kropatsch / Donatello Conte
17h15	Closing of ICPRAI 2022	Amphi Frézal

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