CONFERENCE PROGRAM

2025 18th International Conference on Machine Vision (ICMV 2025)

Paris, France, 19-22, 2025

Hotel Vacances Bleues Provinces Opera

Address: 36 Rue de l'Échiquier, 75010 Paris, France

Web: https://www.hotel-provinces-opera.com/en

WELCOME ADDRESS

On behalf of the organizing committee, I welcome all the eminent speakers and guests from all over the world from different walks of life you have come here to share their knowledge and vast experience with the conference community on 2025 18th International Conference on Machine Vision (ICMV 2025), to be held in Paris, France, during October 19-22, 2025.

ICMV conference is organized by esteemed institutions such as University of Stuttgart, University of Barcelona, and The Federal Research Center "Computer Science and Control" of the RAS, with support from globally renowned organizations including Aberystwyth University, Skolkovo Institute of Science and Technology, Ecole Nationale Supérieure des Mines de Saint-Etienne, University of Electronic Science and Technology of China, and Sfax University.

ICMV 2025 conference is highlighted by 7 Conference Speakers, they are:
Prof. Arie den Boef, Vrije Universiteit, Amsterdam and Corporate Fellow at ASML;
Prof. Vittorio Murino, Istituto Italiano di Tecnologia, Italy;
Prof. Eberhard Manske, Technische Universität Ilmenau, Germany;
Prof. Ehrenfried Zschech, Brandenburg University of Technology, Germany;
Prof. Jeff Kuhn, University of Hawaii, USA;
Prof. Pietro Ferraro, Institute of Applied Sciences & Intelligent Systems Campi Flegrei, Italy;
Prof. Peng Gao, Xidian University, China.

Paris, France's capital, is a major European city and a global center for art, fashion, gastronomy and culture. Its 19th-century cityscape is crisscrossed by wide boulevards and the River Seine. Beyond such landmarks as the Eiffel Tower and the 12th-century, Gothic Notre-Dame cathedral, the city is known for its cafe culture and designer boutiques along the Rue du Faubourg Saint-Honoré.

We do hope that you will enjoy the conference and that your interaction with attendees will stimulate a creative exchange of ideas and will be personally rewarding!

Finally, we would like to thank our sponsors, and partners for their support in making this conference possible. Wish you all have a nice experience in Paris!

Yours sincerely,
Conference Organizing Committees
Paris, France

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GENERAL INFORMATION

Conference Venue

Hotel Vacances Bleues Provinces Opera

Address: 36 Rue de l'Échiquier, 75010 Paris, France

Web: https://www.hotel-provinces-opera.com/en

No free accommodation provided, please reserve your hotel room by yourself in Paris in advance.

Conference Room

Level	Conference Rooms	Oct. 19	Oct. 20	Oct. 21	Oct. 22
GF	Medicis AB	❖	----	----	----
GF	Navarre	----	❖	----	----
GF	Henri IV A	----	❖	----	----
GF	Henri IV B	----	❖	----	----

❖onsite meeting room available; ----onsite meeting room unavailable

No onsite meeting rooms available on Oct. 21th or 22th.

Floor Plan

Time Zone

UTC/GMT+2, Paris Time

Weather

Average Low temperature

7°C

Average High Temperature

17°C

Emergency Numbers in France

In all cases, be prepared to answer three questions: who am I (give a telephone number), where am I (precise address) and why am I calling?

If you witness or are the victim of an accident, here are the emergency numbers to use:

SAMU (medical emergencies): 15

Police emergency: 17

Fire brigade: 18

European emergency number: 112

Emergency number for the deaf and hard of hearing: 114

For emergencies at sea: 196

For aeronautical emergencies: 191

Transportation to Conference Venue

BY TRAIN: Gare de l'Est and Gare du Nord stations are a 5-minute drive away.

BY METRO: Bonne Nouvelle" metro station, on lines 8 and 9, is closest to the hotel. Also 300m from the hotel is the Strasbourg Saint-Denis station on line 4, which crosses Paris from north to south.

BY CAR: If you're coming to Paris by car, we recommend you take the Boulevard Bonne Nouvelle. Take rue d'Hauteville, then the 3rd street on the right after porte Saint Martin. After 80 m, take the first street on the left to reach the hotel: 36 rue de l'Échiquier - Paris 10ème.

BY AIR: If you arrive at Paris Charles de Gaulle or Orly airport, airport shuttles will take you to Gare Montparnasse or Les Invalides. From there, the metro (direct lines 4 or 8) takes you close to the hotel. The shuttles also stop at Porte Maillot, from where you can continue with line 1 and then line 8.

*All information sourced from internet

Presenter Information

Oral Presenters

- Each oral presentation is with 15 Mins time slot, including 10 Mins presentation and 5 Mins for questions from the audience.
- Your punctual arrival and active involvement in each session will be highly appreciated.
- Get your Presentation PPT slides, or PDF files prepared in advance and backed up.
- Laptop, projector & screen, laser sticks will be provided in the meeting room for presentation use.

Poster Presenters

- Poster size: 0.6m width X 0.8m height, with your paper ID on upper right corner, printed out by poster fabric is preferred.
- Poster to be printed and brought to conference site by presenter self. (Please don't use adhesive back for posters, tape will be provided on site).
- Prepare a 3 Mins introduction about your poster in advance.
- At least 1 author to stand by the poster during the Poster session, which is not only to present your work, but also to answer questions from the audience.
- Presenters are kindly requested to paste their posters 5 minutes prior to the start of the session.

Online Oral Presenters

- Install Zoom tool on your device (https://zoom.us/download), join the meeting by click the Zoom link or insert the meeting ID, equipped with laptop with stable internet connection, audio/ video turn-on.
- For presenters: Rename yourself with "Session No. +Paper ID+ Name", such as "T1+Paper ID+Lily".
- For session Chair, please rename as "SC+Name".
- Certificate will be emailed to you after the conference.

Security

- Please remember to take your belongings with you whenever you leave meeting room. Do not leave bags/laptops unattended.
- For security purposes, delegates, speakers, exhibitors and staff are required to wear their name badge to all sessions and social functions. Entrance into sessions is restricted to registered delegates only. If you misplace your name badge, please replace at the registration counter.

Zoom ID

Online Room	Meeting ID	Zoom Link
Zoom A	845 9824 0312	https://us02web.zoom.us/j/84598240312
Zoom B	829 5953 5528	https://us02web.zoom.us/j/82959535528

Zoom Test for Online Presenters

Paris Time | Oct. 19	Zoom ID: 845 9824 0312
10:00-12:00	Test

AGENDA OVERVIEW

Day 1 | Oct. 19, 2025

Paris Time	Activity		Venue
10:00-12:00	Online Test *(for online presenters only)*		845 9824 0312
09:30-17:00	**Sign in & Conference Materials Collection** *(for onsite attendees)*		Salon Medicis
13:30-13:45	**Opening Ceremony**	**Opening Remarks:** **Wolfgang Osten**, University of Stuttgart, Germany	Medicis AB
		Program Address: **Petia Radeva**, University of Barcelona, Spain	
		Welcome Address: **Antoun Yaacoub**, ESIEA, France*	
	Host: **Wolfgang Osten**, *University of Stuttgart, Germany*		
13:45-14:20	**Speech 1: Image Enhancement in Optical Overlay Metrology using Digital Holographic Microscopy** **Arie den Boef** Vrije Universiteit, Amsterdam, and Corporate Fellow at ASML		
14:20-14:55	**Speech 2: Mitigating Bias in Modern Machine Learning Models** **Vittorio Murino** Istituto Italiano di Tecnologia, Italy		
14:55-15:30	**Speech 3: Advanced Nanopositioning and Nanomeasuring Technology with New Capabilities for Optical Detection** **Eberhard Manske** Technische Universität Ilmenau, Germany		
15:30-16:00	**Group Photo & Coffee Break**		
	Host: **Vladimir Arlazarov**, *Federal Research Center "Computer Science and Control" of Russian Academy of Sciences, Russia*		
16:00-16:35	**Speech 4: High-resolution X-ray Imaging for Industrial Process Monitoring and Quality Control** **Ehrenfried Zschech** Brandenburg University of Technology, Germany		
16:35-17:10	**Speech 5: The ExoLife Finder (ELF) and Small ExoLife Finder Telescope Projects** **Jeff Kuhn** University of Hawaii, USA		
17:10-17:45	**Speech 6: TOMOFLOW: Intelligent Computational Holographic Microscopy Meets Microfluidics for Next-Generation Imaging** **Pietro Ferraro** Institute of Applied Sciences & Intelligent Systems Campi Flegrei, Italy		
17:45-18:20	**Speech 7: Sparse Scanning Structured Illumination Microscopy (SS-SIM) for Super-resolution Imaging of Thick Samples** **Peng Gao** Xidian University, China		
18:30-20:00	**Award & Dinner**		Restaurant

Day 2 | Oct. 20, 2025

Paris Time	Activity	Venue
09:30-12:00	**Oral Session 1:** Intelligent Image Detection Models and Algorithms	Navarre
09:30-12:00	**Oral Session 2:** Image Models and Computational Methods	Henri IV A
09:15-12:00	**Oral Session 3:** Computer Optics Journal	Henri IV B
10:30-11:00	**Coffee Break**	
12:00-13:30	**Lunch**	Restaurant
13:30-15:30	**Oral Session 4:** Image Classification and Algorithms	Navarre
13:30-15:30	**Oral Session 5:** Feature Analysis and Image Segmentation	Henri IV A
13:30-15:30	**Oral Session 6:** Domain Adaptation and Generalization: Addressing in Vision-Language Models and Medical Imaging Tasks	Henri IV B
15:30-16:00	**Poster Session & Coffee Break**	Salon Medicis
16:00-17:45	**Oral Session 7:** Machine Vision and Visualization	Navarre
16:00-17:45	**Oral Session 8:** Digital Image Understanding and Imaging Technology	Henri IV A
16:00-17:30	**Oral Session 9:** Image Recognition and Pattern Recognition	Henri IV B
18:00-19:00	**Closing & Drink**	Salon Medicis

Day 3 | Oct. 21, 2025

Paris Time	Activity	Venue
10:00-11:00	**Google Arts & Culture Lab Visit** (Within 50 participants)	Google's Headquarters

Day 4 | Oct. 22, 2025

Paris Time	Activity	Online Only
10:00-12:30	**Online Session 1:** Computer-assisted Imaging and Image Analysis	Zoom ID: 845 9824 0312
10:00-12:15	**Online Session 2:** Intelligent Detection Models and Application Technologies	Zoom ID: 829 5953 5528
12:30-13:00	**Break**	
13:00-15:30	**Online Session 3:** Computer Vision and Visualization	Zoom ID: 845 9824 0312
13:00-15:30	**Online Session 4:** Image Recognition and Segmentation	Zoom ID: 829 5953 5528

» CONFERENCE SPEECH I

Time: 13:45-14:20, 19 Oct. SUN **Venue: Medicis AB**

Arie den Boef

Vrije Universiteit, Amsterdam and Corporate Fellow at ASML

Speech Title: Image Enhancement in Optical Overlay Metrology using Digital Holographic Microscopy

Abstract: Device density in semiconductor chips continues to increase through many innovations. For example, high-NA EUV lithography enables the printing of smaller features that allow more devices in a smaller area. In addition, many innovations are taking place in the area of 3D device integration where devices are stacked on each other.

Manufacturing state-of-the-art chips with sufficient yield requires good control of many process steps during manufacturing. Overlay, for example, is a critical parameter and describes the lateral misalignment between 2 overlapping layers in a device. Any misalignment (=overlay error) can result in a significant yield loss and overlay must therefore be controlled to the 1 nm level. These levels of control need robust overlay metrology with sub-nanometer precision levels.

Overlay is often measured on dedicated small targets using an optical microscope. However, robustly achieving sub-nanometer precision requires near-perfect imaging conditions which drives the need for high-quality high-NA imaging optics with very low aberration levels. Technically this is possible, but leads to complex and costly optical imaging systems. As a result, there is a need for a more cost-efficient microscopy technique that offers high imaging quality.

The ARCNL research institute is exploring Digital Holographic Microscopy (DHM) as a potential future option for overlay metrology. In our DHM concept we image an overlay target on a camera using low-cost high-NA optics with only a few lens elements. The resulting image is aberrated but DHM is able to computationally correct for aberrations and therefore offers near-perfect imaging in a cost-effective way.

This talk will explain in more detail the challenges in overlay metrology from an imaging perspective. We will then explain our DHM concept as a potential solution to these challenges. Experimental data will be presented that demonstrate some of these solutions. Moreover, we will also present potential solutions to some of the challenges in DHM like vibration sensitivity.

Bio.: Arie den Boef *is a Corporate Fellow at ASML where he is involved in research on optical wafer metrology. He joined ASML in 1997 and since 2016 he is also a part-time full professor at the Vrije Universiteit in Amsterdam and a part-time group leader of the "Computational Imaging" group at the Advanced Research Center for Nano Lithography in Amsterdam (ARCNL). From 1995 till 1997 he worked at Philips Optical Storage as a System Engineer for optical recording systems. From 1992-1995 he was at Philips Medical Systems working on Magnetic Resonance Imaging. Before joining Medical Systems Arie was at Philips Research Laboratories from 1979 – 1992 where he was involved in laser diode characterization and research on optical measurement systems for industrial inspection. Arie received a B.Sc. degree in electrical engineering in 1985 from the Eindhoven Polytechnic Institute and a Ph.D. degree in 1991 from the department of Physics from the University of Twente, The Netherlands. The topic of his Ph.D. thesis was "Scanning Force Microscopy using Optical Interferometry".*

» CONFERENCE SPEECH II

Time: 14:20-14:55, 19 Oct. SUN **Venue: Medicis AB**

Vittorio Murino

Istituto Italiano di Tecnologia, Italy

Speech Title: Mitigating Bias in Modern Machine Learning Models

Abstract: In this talk, I address the problem of bias in modern machine learning models and how to mitigate its effect by devising proper training algorithms. it is well known that Deep Neural Networks efficiently fit training data, yet experiencing poor generalization capabilities whenever some kind of bias dominates over the actual task labels. In other words, such models are often prone to learn spurious correlations between data and labels, a phenomenon also named as learning “shortcuts”. The problem is even more complex if we deal with the very realistic unsupervised scenario, i.e., when the bias is unknown. After proposing a definition of the bias issue, I will present a couple of learning pipelines featuring a data augmentation strategy able to regularize the training. The first approach is a 2-stage method where, first, bias-aligned and conflicting samples are identified by training over-biased models and, second, such subdivision is then exploited within a data augmentation framework, properly combining the original samples while learning mixing parameters, which has a regularization effect. The second approach instead uses at first a conditional diffusion model with classifier-free guidance to generate synthetic images that preserve training dataset biases, and then employs a bias amplifier model (trained on such synthetic data) in inference to extract supervisory bias signals from real images. These signals are finally used to guide the training process of a target debiased model. Experiments on synthetic and realistic biased datasets show state-of-the-art classification accuracy, outperforming competing methods, ultimately proving robust performance on both biased (aligned) and unbiased (conflicting) examples. Notably, being our training methods totally agnostic to the level of bias, they also positively affect performance for any, even apparently unbiased, dataset, thus improving the model generalization regardless of the level of bias (or its absence) in the data.

Bio.: Vittorio Murino *is full professor at the University of Verona, Italy, and director of the PAVIS (Pattern Analysis and Computer Vision) department at the Istituto Italiano di Tecnologia. He took the Laurea degree in Electronic Engineering in 1989 and the Ph.D. in Electronic Engineering and Computer Science in 1993 at the University of Genova, Italy. He was chairman of the Department of Computer Science from 2001, year of foundation, to 2007, and coordinator of the Ph.D. program in Computer Science in the same university from 1999 to 2003. Prof. Murino is scientific responsible of several national and European projects, and evaluator of EU project proposals related to several frameworks and programs. Currently, he is working at the Istituto Italiano di Tecnologia in Genova, Italy, leading PAVIS department involved in computer vision, machine learning, and image analysis activities. His main research interests include computer vision, pattern recognition and machine learning, more specifically, statistical and probabilistic techniques for image and video processing, with applications on (human) behavior analysis and related applications such as video surveillance, biomedical imaging, and bioinformatics. Prof. Murino is co-author of more than 300 papers published in refereed journals and international conferences, member of the technical committees of important conferences (CVPR, ICCV, ECCV, ICPR, ICIP, etc.), and guest co-editor of special issues in relevant scientific journals. He is also member of the editorial board of Pattern Recognition, Pattern Analysis and Applications, Machine Vision & Applications, and Computer Vision and Image Understanding journals, as well as of IEEE Transactions on Cybernetics. Finally, prof. Murino is senior member of the IEEE and Fellow of the IAPR.*

» CONFERENCE SPEECH III

Time: 14:55-15:30, 19 Oct. SUN **Venue: Medicis AB**

Eberhard Manske

Technische Universität Ilmenau, Germany

Speech Title: Advanced Nanopositioning and Nanomeasuring Technology with New Capabilities for Optical Detection

Abstract: Nanomeasuring Technology is undisputedly an enabler for the acquisition of new knowledge in the nanoworld and at the same time for the implementation of nanotechnology in real applications. More and more, the limits of physics and technology are being put to the test. In particular, the fabrication of X-ray optics will not make decisive progress without high-precision nano instrumentation.

In recent years, the TU Ilmenau has succeeded in developing nanopositioning and nanomeasuring machines for a measuring range of 200 mm x 200 mm x 20 mm with a resolution of 20 pm. The enormous accuracy is only made possible by the consistent application of error-minimum measurement principles, highly accurate interferometric measurement technology in combination with highly developed measurement signal processing and comprehensive error correction algorithms.

As a remarkable result, a reproducibility of 20 pm could be achieved for length measurements in the millimeter range. The achieved relative resolution of 10-10 exceeds the potential of current conventional frequency stabilization of He-Ne lasers. Here, the first time an approach of direct coupling and stabilization of a He-Ne laser to a phase-stabilized optical frequency comb controlled by a GPS atomic clock disciplined oscillator. This enables a frequency stability of the vacuum wavelength of the He-Ne laser of 2 x 10-12 and for the first time a permanent traceability of the laser frequency to the SI unit second. Further, the coupling of the thus stabilized He-Ne laser via optical fibers with the laser interferometers of the NPM machine was demonstrated. In order to take advantage of the increased performance of the lasers in the interferometers, further work is now being done to significantly improve the stability of the refractive index within the NPM machine.

The enormous precision of the machines enables the use versatile tactile and AFM probes, as well as optical point and area sensors. Here, incredibly precise measurement results can be presented and discussed the enormous possibilities of this new technology. Finally, new approaches for further extending the accuracy of optical sensors in particular are presented.

Bio.: Eberhard Manske *received his diploma in electrical engineering from the Technical University of Ilmenau in 1982. He obtained his doctorate in 1986 and habilitated in 2006 in the field of precision metrology. Since 2008, he has held a professorship for "Production and Precision Metrology" at the Technical University of Ilmenau. From 2008 to 2013, he was spokesperson for the Collaborative Research Centre "Nanopositioning and Nanomeasuring Machines (SFB 622)" and from 2017-2020 he headed the Research Training Group "Advanced and laser-based 3D nanofabrication in extended macroscopic working areas (NanoFab)" funded by the German Research Foundation. His research activities focus on the development of nanopositioning and nanomeasuring machines, particularly in the fields of high-precision laser interferometry, laser stabilisation, frequency comb technology, optical and tactile nanosensors and scanning probe methods. Together with Dr Denis Dontsov (SIOS Meßtechnik GmbH), he established World Interferometry Day in 1921, which is celebrated annually at the beginning of April to mark the first successful interferometer experiment by Albert Michelson in 1881.*

CONFERENCE SPEECH IV

Time: 16:00-16:35, 19 Oct. SUN **Venue: Medicis AB**

Ehrenfried Zschech

Brandenburg University of Technology, Germany

Speech Title: High-resolution X-ray Imaging for Industrial Process Monitoring and Quality Control

Abstract: High-resolution X-ray imaging provides nondestructive characterization capabilities on opaque objects, observing features with sizes across a range of length scales, down to several 10 nanometers using lens-based transmission X-ray microscopy (TXM). X-ray computed tomography (XCT), characterized by a sample thickness/resolution value of ~ 103, and subsequent 3D data reconstruction, is an efficient approach to study the 3D morphology of natural and engineered hierarchically structured systems and materials. Because of the ability of micro-XCT and nano-XCT to reveal structural characteristics, to determine deviations from a well-defined standard, or to observe kinetic processes, they are potential imaging techniques for micro- and nano-structured objects, but also for industrial process monitoring and quality control [1]. In this talk, typical applications of high-resolution XCT are categorized into 3 groups: 1) Creation of 3D digital images of the complete interior structure of an opaque object, e.g., a natural object or an engineered composite or skeleton material (typically for fundamental research), 2) Monitoring industrial processes and defect inspection (e.g., in the semiconductor industry), and 3) Observing kinetic processes in objects, both in materials synthesis and in materials ageing, important for industrial quality control and reliability engineering. These different categories of applications have different requirements for the accuracy of the 3D reconstruction and for the time-to-data [2]. While the highest possible resolution is requested for group 1, data acquisition and data analysis time are essential for group 2. To get highresolution 3D information of the complete interior structure of an opaque object using lens-based laboratory nano-XCT requires a thorough data analysis, e.g., the application of deep convolutional neural networks, for denoising andmitigation of artefacts. On the micro- and nanoscale, thermomechanical instability of tool components and object motion, center of rotation misalignment, and inaccuracy in the detector position require computational efforts [3]. Advanced 3D reconstruction methodologies consider these unavoidable effects during the image acquisition [4].

The rapid evolution of advanced semiconductor technologies, including technologies for heterogeneous 3D integration of ICs and chiplet architectures, presents significant challenges for metrology, defect inspection, and physical failure analysis (PFA). The application of nano-XCT as a highly reliable inspection method requires a balance between throughput and fault detection (i.e., measurement and reconstruction accuracy) [5]. Ways for a drastic acquisition speed increase are high-brilliance laboratory X-ray sources, the application of AI algorithms for new image acquisition protocols, and high-speed data processing. An outlook for a seamless workflow for advanced package FA and defect inspection, that combines acoustic and X-ray techniques to auto-detect and auto-classify defects, with the goal to improve throughput and defect detectability, will be presented [6]. Finally, kinetic studies, e.g., of reliability-limiting degradation processes in microchips, provide the opportunity to establish appropriate risk mitigation strategies to avoid catastrophic failure. The nano-XCT imaging of the microcrack evolution points out possible directions to ensure the requested mechanical robustness of microchips and of heterogeneously integrated chiplets, applying advanced packaging technologies [7].

Bio.: Ehrenfried Zschech *is a consultant with hands-on experience in the fields of advanced materials, nanotechnology, and microelectronics, as well as process control and quality assessment. He holds honorary professorships in Nanomaterials at Brandenburg University of Technology Cottbus-Senftenberg and in Nanoanalysis at Dresden University of Technology, and he is a Guest Chair Professor at Southeast University, Nanjing, China. His activities include high-resolution Xray imaging and the development of customized solutions for a broad range of applications, including package failure analysis, metrology, and inspection in microelectronics. Ehrenfried Zschech received his Dr. rer. nat. degree from Dresden University of Technology. He held several management positions at Airbus, Advanced Micro Devices, Fraunhofer, and the start-up deepXscan. Ehrenfried Zschech is a Member of the European Academy of Science (EurASc) and a Member of the German National Academy of Science and Engineering (ACATECH). In 2019, he was awarded the FEMS European Materials Gold Medal, in 2023 the DGM Pioneer Award, and with the Roland Mitsche Prize.*

CONFERENCE SPEECH V

Time: 16:35-17:10, 19 Oct. SUN **Venue: Medicis AB**

Jeff Kuhn

University of Hawaii, USA

Speech Title: The ExoLife Finder (ELF) and Small ExoLife Finder Telescope Projects

Abstract: The Laboratory for Innovation in OptoMechanics (LIOM) at the IAC is designing the world's largest telescope – it will look for signs of life on the nearest exoplanets. To build this 35m-scale diameter telescope will depend critically on new technologies, in particular machine learning (ML). This telescope, called the ExoLife Finder (ELF), is unlike other ground-based telescopes because it is optimized from the onset to achieve narrow field-of-view observations of optical and IR sources with enormous photometric dynamic range. For example, an Earthlike (habitable zone) exoplanet will be a billion times fainter than its host solar-like star. The ELF is 10 years away from operating but its prototype, the Small ELF (SELF), is being built now on Teide on Tenerife in the Canary Islands. SELF is a 3.5m fixed aperture Fizeau interferometer formed from 15 0.5m diameter 2-mirror off-axis telescopes. It has a total mass that is only about 20% of the total moving mass of a conventional telescope of the same diameter. As an interferometer it requires ultraprecise mechanical alignment (accurate to about 10nm over the length of the structure) and it uses many actuated mechanical degrees of freedom to enforce this alignment in an environment of changing gravity, temperature, and stochastic driving forces (like wind). Controlling these optomechanical degrees of freedom (DOF) requires machine learning tools. Finally the data such a telescope collects also depends on ML tools to interpret and understand the exoplanet reflected light, and ultimately to generate images of the surfaces of planets around stars that are within about 30 light years of the Sun. This talk will summarize the motivation and progress toward designing and building the SELF and ELF, and the ML systems that are essential for enabling these optomechanical systems.

Bio.: Jeff's *1981 PhD is in physics from Princeton. He's currently emeritus professor of Astronomy at the University of Hawaii, where he was founder of the Advanced Technology Research Center of the Institute for Astronomy, and its director for 10 years. He is currently a distinguished senior researcher at the Instituto de Astrofisica de Canarias (IAC) and the ERA Chair and leader of the Laboratory for Innovation in Optomechanics at the IAC. He started the optical technology company MorphOptic, Inc. and the non-profit Planets Foundation. His publications encompass many areas of solar, stellar and gravitational physics, polarimetry, IR optical and instrumentation technology, and signal detection. Kuhn is a Sloan Foundation grant recipient, winner of the Humboldt Prize (Germany), and Regents Prize (Hawaii). He believes new astronomical (and remote sensing) instrumentation is paced by advances in materials and information technologies. These are accelerating in step with "Moores Law" much like the growth in digital computing. The astronomical instruments and telescopes being conceived and built today have complexity and capability that we could barely imagine a decade ago. Kuhn has been involved in the design and realization of such large and small astronomical instruments for more than 30 years.*

CONFERENCE SPEECH VI

Time: 17:10-17:45, 19 Oct. SUN **Venue: Medicis AB**

Pietro Ferraro

Institute of Applied Sciences & Intelligent Systems Campi Flegrei, Italy

Speech Title: TOMOFLOW: Intelligent Computational Holographic Microscopy Meets Microfluidics for Next-Generation Imaging

Abstract: The rapid analysis of small, dynamic, and heterogeneous particles—such as live cells, microplastics, and aquatic microorganisms—poses a major challenge in biomedical and environmental research. TOMOFLOW presents a novel platform that synergizes intelligent computational microscopy with microfluidic technology to enable high-throughput, label-free 3D holographic imaging of microscopic objects in flow. By reconstructing refractive index tomograms in real-time and leveraging multimodal analysis driven by AI it oXers unprecedented capability and steps forward automation in identifying and characterizing subcellular structures, synthetic particles, and microbial species. This integrative approach sets the stage for next-generation imaging tools in cytometry, ecotoxicology, and microbiology.

Bio.: Pietro Ferraro *is Director of Research at the CNR Institute of Applied Sciences and Intelligent Systems (ISASI), Italy. He served as ISASI Director from 2014 to 2019 and President of CNR Research Area in Pozzuoli from 2012 to 2019. Ferraro has held leadership roles in various organizations and worked as Principal Investigator with Alenia Aeronautics from 1988 to 1993. His research spans holography, microscopy, biomedical sensing, micro-nanostructures, non-destructive testing and optical sensors, with over 350 journal papers, 20,000 citations and 14 patents. A Fellow of both Optica and SPIE, and Senior Member of IEEEE he received the SPIE Gabor Award and served on the Scientific and Technical Committee for the Italian Space Agency from 2018 to 2023.*

CONFERENCE SPEECH VII

Time: 17:45-18:20, 19 Oct. SUN **Venue: Medicis AB**

Peng Gao

Xidian University, China

Speech Title: Sparse Scanning Structured Illumination Microscopy (SS-SIM) for Super-resolution Imaging of Thick Samples

Abstract: Structured illumination microscopy (SIM) is a powerful super-resolution optical technique most suitable for live sample imaging. However, conventional SIM suffers from limited penetration depth (tens of micrometers) since its wide-field illumination is susceptible to sample scattering. To overcome this limitation, we developed a sparse scanning structured illumination microscopy (SS-SIM) as a super-resolution imaging technique for thick sample imaging. SS-SIM utilizes sparse fringe patterns generated by resonant scanning of a focused laser spot and synchronized intensity modulation. SS-SIM achieves a spatial resolution of 154 ± 12 nm, ~1.6-fold enhancement over conventional wide-field microscopy, across an imaging depth range from 0 to 200 μm for single-photon and 600 μm for two-photon excitation. We envision that our technique will find applications in imaging cells, tissues, and organisms, as well as other areas of the life sciences.

***Bio.: Prof. Dr. Peng Gao**, studied Physics and received his Ph.D. at the Xi'an Institute of Optics and Precision Mechanics (XIOPM), CAS, in 2011. He was a "Humboldt Fellow" in University Stuttgart (2012-2014) and Marie-Curie Fellow (IEF) in KIT (2014-2018). He is currently a PI at Xidian University. His group focuses on developing quantitative phase microscopy and super-resolution optical microscopy techniques for biology. So far, he has authored over 100 peer-reviewed papers published in journals, including Nat. Photonics, Adv. Opt. Photon. Some of his publications were highlighted by tens of international media, such as Science Daily, Physics News, and so on. He is currently one of the associate editors of Optics and Laser Technology (OLT) and Frontiers in Physics,*

TECHNICAL SESSION

T1/ Intelligent Image Detection Models and Algorithms

09:30-12:00, 20 Oct. @ Navarre

Chair: Alptekin Temizel, *Middle East Technical University, Turkey*

Paris Time	ID	Presenter	Affiliation
09:30-09:45	T1-1	Țarcă Andrei-Ioan	Babeș-Bolyai University, Romania
09:45-10:00	T1-2	Zi Wang	Niigata University, Japan
10:00-10:15	T1-3	Axell Albano Gutiérrez Ramírez	Instituto Politécnico Nacional, Mexico
10:15-10:30	T1-4	Imen Chtourou	CNRS, I3S, Universite Côte d'azur, France
10:30-10:45	T1-5	Yoann Dupas	Orange Research and LIG - University of Grenoble Alpes, France
10:45-11:00	T1-6	Aman Anand	Queen's University, Canada
11:00-11:15	T1-7	Johannes Benkert	Bergische Universität Wuppertal, Germany
11:15-11:30	T1-8	Lukas Brunner	Department of Visual Computing at Profactor GmbH, Austria
11:30-11:45	T1-9	Blanka Bencsik	Budapest University of Technology and Economics, Hungary
11:45-12:00	T1-10	Nguyen Thien Bao	University of Economics Ho Chi Minh City, Vietnam

Details

ID	Title and Authors
T1-1	ArrowFormer - Detecting Painted Symbols using DEViT Țarcă Andrei-Ioan, Comănac Dragoș-Mihail, Coroamă Larisa-Gabriela, Măcinic Victor-Mihai
T1-2	Boosting High-Resolution 3D Point Cloud Anomaly Detection with Geometric Constraints Zi Wang, Katsuya Hotta, Yawen Zou, Yu Ding, Chao Zhang, Jun Yu
T1-3	Detection of Parkinson's Disease Using Spiral Drawings and Machine Learning Approaches Axell Albano Gutiérrez Ramírez, Antonio Alarcón Paredes, Cornelio Yáñez Márquez
T1-4	A CNN-Transformer Hybrid Method for Kidney Disease Detection Najla Bouarada Ghrab, Taoufik Ben Abdallah, Imen Chtourou, Mayssa Frikha, Emna Fendri, Mohamed Hammami
T1-5	MEFA-MS: Attention-Based U-Net for Pedestrian and Vehicle Detection Yoann Dupas, Olivier Hotel, Grégoire Lefebvre, Christophe Cérin
T1-6	Depth-Guided Self-Supervised Human Keypoint Detection via Cross-Modal Distillation Aman Anand, Elyas Rashno, Amir Eskindari, Farhana Zulkernine
T1-7	Dataset Curation for a Domain-Specific People Detection System Johannes Benkert, Philip Wagner, Mathias Zinnen, Vincent Christlein, Tobias Meisen
T1-8	Human Perception for Print Defect Detection Lukas Brunner, Thomas Pönitz, Florian Kromp
T1-9	Accelerated Reinforcement Learning-based Pruning Strategy Search for Cross-Domain Generalization Blanka Bencsik, Márton Szemenyei
T1-10	Real-time Fish Detection and Counting System using Deep Learning Computer Vision Nguyen Tuan Kiet, Nguyen Truong Thinh

TECHNICAL SESSION

T2/ Image Models and Computational Methods

09:30-12:00, 20 Oct. @ Henri IV A

Chair: Ali Alqahtani, *King Khalid University, Saudi Arabia*

Paris Time	ID	Presenter	Affiliation
09:30-09:45	T2-1	Sio-Song Ieng	Universite Gustave Eiffel, France
09:45-10:00	T2-2	Pedro Caio Castro Côrtes C Coutinho	Université de Bordeaux, France
10:00-10:15	T2-3	Abderrahman Ben Abdeljelil	Sfax National Engineering School, Tunisia
10:15-10:30	T2-4	Tim Selig	Hochschule Darmstadt, Germany
10:30-10:45	T2-5	Andra Laura Dobre	National University of Science and Technology POLITEHNICA Bucharest, Romania
10:45-11:00	T2-6	Danil Kazimirov	Institute for Information Transmission Problems (Kharkevich Institute) RAS, Russia
11:00-11:15	T2-7	Kamilla Kiiamova	Smart Engines Service LLC, Russia
11:15-11:30	T2-8	Huajian Li	Fraunhofer IKTS, Deutschland
11:30-11:45	T2-9	Madina Mirzatayeva, Iroda Ibrohimova	Carnegie Mellon University Qatar, Qatar
11:45-12:00	T2-10	Ali Alqahtani	King Khalid University, Saudi Arabia

Details

ID	Title and Authors
T2-1	Shallow and Explainable LiDAR based Weather Classifier Neural Network for Automated Driving Alexandre Jacquemart, Sio-Song Ieng, Mokrane Hadj-Bachir, Dominique Gruyer
T2-2	Explicit Disentanglement through Conditional Modeling of Image Properties Pedro Caio Castro Côrtes C Coutinho, Yannick Berthoumieu, Marc Donias, Sébastien Guillon
T2-3	Towards Higher HRNet Accuracy for Pose Estimation using Motion Capture-Driven Annotations Abderrahman Ben Abdeljelil, Mohamed Hédi Bedoui
T2-4	Fine-Tuning Gaussian Denoisers for Fluorescence Microscopy Image Enhancement Tim Selig, Leopold Groznov, Thomas März, Martin Storath, Andreas Weinmann
T2-5	Low-Risk Pap Smear Image Filtering Method via Transfer Learning Andra Laura Dobre, Corina Elena Petean, Ștefana Duță, Alina Elena Sultana, Florian Vintilă Armășescu, Maria Oniga
T2-6	A High-Accuracy Fast Hough Transform with Linear – Log-Cubed Computational Complexity for Arbitrary-Shaped Images Danil Kazimirov, Dmitry Nikolaev
T2-7	Fast Approximate Matrix Multiplication for 8-bit Neural Networks Using Tree Averaging Kiiamova K, Limonova E, Zingerenko M, Nikolaev D, Arlazarov V. V.
T2-8	Textureless CAD based Domain Randomized Synthetic Data Generation for AI Model Training Huajian Li, Maximilian Gast, Ivan Kraljevski, Paul Meyer, Constanze Tschöpe, Matthias Wolff
T2-9	Generating Synthetic Datasets to Train Deep Models for Counting in Large-Scale Animal Groups Madina Mirzatayeva, Iroda Ibrohimova, Gianni Di Caro
T2-10	Enhancing Arabic Traffic Sign Recognition through Synthetic Data Generation Using Diffusion Models Ali Alqahtani, Mona Nasser

TECHNICAL SESSION

T3/ Computer Optics Journal

09:15-12:00, 20 Oct.@ Henri IV B

Chair: Vladimir Arlazarov, *Federal Research Center "Computer Science and Control" of Russian Academy of Sciences, Russia*

Paris Time	ID	Presenter	Affiliation
09:15-09:30	T3-1	Elena Limonova	Smart Engines Service LLC, Russia
09:30-09:45	T3-2	Varvara Karyakina	Smart Engines Service LLC, Russia
09:45-10:00	T3-3	Aleksandr Ershov	Smart Engines Service LLC, Russia
10:00-10:15	T3-4	Matalov D. P	Smart Engines Service LLC, Russia
10:15-10:30	T3-5	Vladimir Karnaushko	Smart Engines Service LLC, Russia
10:30-10:45	T3-6	Pavel Zlobin	Smart Engines Service LLC, Russia
10:45-11:00	T3-7	A.V. Chuiko	Smart Engines Service LLC, Russia
11:00-11:15	T3-8	D.V. Telpukhov	Alphachip, Russia
11:15-11:30	T3-9	Yulia Chernyshova	Smart Engines Service LLC, Russia
11:30-11:45	T3-10	E. O. Rybakova	Smart Engines Service LLC, Russia
11:45-12:00	T3-11	A.V. Chuiko	Smart Engines Service LLC, Russia

Details

ID	Title and Authors
T3-1	Constant Time Feature Matching for ID Document Type Identification with On-the-Fly Type Subset Selection E.E. Limonova, A.V. Trusov, D.Z. Rybalko, N.S. Skoryukina, K.B. Bulatov
T3-2	Deep Learning Approach for Layer-Specific Segmentation of the Olfactory Bulb in X-ray Phase-Contrast Tomography V.A. Karyakina, D.V. Polevoy, I.N. Bukreeva, O.A. Junemann, S.V. Saveliev, M.V. Chukalina
T3-3	Fast Localization and Rectification of Documents Folded into Thirds Aleksandr Ershov, Daniil Tropin, Dmitry Nikolaev
T3-4	Model-driven Approach to Creating ID Document Templates for Localization and Classification based on a Single Image Matalov D.P., Arlazarov V.V.
T3-5	An Adaptive Method for Spiral Segmentation of Aztec Compact Code Images with Irregular Grid Structure V.A. Karnaushko, I.I. Tishin, P.V. Bezmaternykh, V.L. Arlazarov
T3-6	Lightweight Neural Network-Based Pipeline for Barcode Image Preprocessing P.K. Zlobin, V.A. Karnaushko, D.M. Ershova, R. Sanchez-Rivero, P.V. Bezmaternykh, D.P. Nikolaev
T3-7	MIDV-DM: A Document-Oriented Dataset for Image Manipulation Detection and Localization A.V. Chuiko, I.A. Kunina, S.A. Usilin, D.P. Nikolaev, V.V. Arlazarov, C. Chen, S. Tan
T3-8	AlphaDent: A Dataset for Automated Tooth Pathology Detection E.I. Sosnin, Y.L. Vasil'ev, R.A. Solovyev, A.L. Stempkovskiy, D.V. Telpukhov, A.A. Vasilev, A.A. Amerikanov, A.Y. Romanov
T3-9	Enhanced Dynamic Programming-Based Method for Text Line Recognition in Documents Y.S. Chernyshova, K.K. Suloev, A.V. Sheshkus, V.V. Arlazarov

T3-10	Improving Data Matrix Mobile Recognition via Fast Hough Transform and Adaptive Grid Extractors E. O. Rybakova, E. E. Limonova, P. V. Bezmaternykh
T3-11	A Projection Pursuit Algorithm for Document Classification I.M. Janiszewski, O.A. Slavin, A.V. Chuiko

TECHNICAL SESSION

T4/ Image Classification and Algorithms

13:30-15:30, 20 Oct.@ Navarre

Chair: Dorra Sellami, *University of Sfax, Tunisia*

Paris Time	ID	Presenter	Affiliation
13:30-13:45	T4-1	Tomas Mūžas	Vilnius University, Lithuania
13:45-14:00	T4-2	Nguyen Thien Bao	University of Econimics, Vietnam
14:00-14:15	T4-3	Alptekin Temizel	Middle East Technical University, Turkey
14:15-14:30	T4-4	Daniil Valme	Tallinn University of Technology, Estonia
14:30-14:45	T4-5	Yu Ding	University of Toyama, Japan
14:45-15:00	T4-6	Volga Sezen	Middle East Technical University, Turkey
15:00-15:15	T4-7	Dorra Sellami	University of Sfax, Tunisia
15:15-15:30	T4-8	Daniil Iliukhin	Smart Engines Service LLC; Lomonosov Moscow State University, Russia

Details

ID	Title and Authors
T4-1	Domain-Specific Convolutional Neural Network Layers for Galaxy Classification Tomas Mūžas, Andrius Vytautas Misiukas Misiūnas, Tadas Meškauskas
T4-2	P030: Attention Transformer: A Hybrid Framework for Multi-Style Interior Design Classification Nguyen Thien Bao, Nguyen Truong Thinh
T4-3	Adaptive Augmentation Policy Optimization with LLM Feedback Ant Duru, Alptekin Temizel
T4-4	VNIR Hyperspectral Imaging for Nordic Winter Road Surface Classification in Autonomous Driving Applications Daniil Valme, Anton Rassõlkin, Dhanushka Chamara Liyanage
T4-5	Multi-view Clustering via Self-aware Contrastive Attention Fusion Yu Ding, Katsuya Hotta, Chunzhi Gu, Takuya Akashi, Chao Zhang
T4-6	Joint MK Classification of Stellar Spectra with Distance-Aware CNNs Volga Sezen, Alptekin Temizel
T4-7	From Teacher to Student: Achieving High Performance with Compact Models for Waste Classification Samar Daou, Mouna Zouari Mehdi, Jihen Frikha Elleuch, Dorra Sellami, Salwa Sahnoun, Ahmed Fakhfakh, Khaled Elleuch
T4-8	Fast and Accurate Page Orientation Detector for Document Analysis Systems Daniil Iliukhin, Yulia Chernyshova, Alexander Sheshkus

TECHNICAL SESSION

T5/ Feature Analysis and Image Segmentation

13:30-15:30, 20 Oct.@ Henri IV A

Chair: Erdem Akagündüz, *METU, Turkey*

Paris Time	ID	Presenter	Affiliation
13:30-13:45	T5-1	Konstantin Zyryanov	Lomonosov Moscow State University, Russia
13:45-14:00	T5-2	Arash Shahirpour	Institute for Automatic Control, RWTH, Germany
14:00-14:15	T5-3	Rinu Elizabeth Paul	University of Bremen, Germany
14:15-14:30	T5-4	Irem Ulku	Ankara University, Turkey
14:30-14:45	T5-5	Ümit Mert Çağlar	Graduate School of Informatics, METU, Turkey
14:45-15:00	T5-6	Cihan Katar	Istanbul Technical University, Turkey
15:00-15:15	T5-7	Sven Ysker	Leibniz University Hannover, Germany
15:15-15:30	T5-8	Daria Ershova	OCR Studio L.L.C, United Arab Emirates

Details

ID	Title and Authors
T5-1	Morphological Real-Time Defense Against Physical Attacks on Convolutional Neural Networks Konstantin Zyryanov, Alexey Chulichkov
T5-2	Wind Turbine Feature Detection Using Deep Learning and Synthetic Data Arash Shahirpour, Jakob Gebler, Manuel Sanders, Tim Reuscher
T5-3	Silhouette Extraction from Depth Sensors for Older Adult Monitoring at Nursing Homes Rinu Elizabeth Paul, Jomit Othalamattamthadthil Devasia, Pantea Kock, Tanja Schultz
T5-4	Channel-Attentive Transformer-Based Multimodal Semantic Segmentation Model for Early Detection of Wheat Yellow Rust Disease Irem Ulku, Erdem Akagunduz, Omer Ozgur Tanriover
T5-5	Colorectal Cancer Segmentation with Adaptive Augmentation and Multi-Resolution Ensemble Models Ümit Mert Çağlar, Alptekin Temizel
T5-6	Self-Distillation with Edge-Aware Pseudo-Masks for Skin Lesion Segmentation Cihan Katar, Ender Mete Ekşioğlu
T5-7	FFT-based Appearance Adaptation for the Semantic Segmentation of Small-scale Aerial Image Datasets Daniel Gritzner, Sven Ysker, Joern Ostermann
T5-8	IIRDoc-Net: Efficient ID Segmentation with Learnable IIR Filters for Mobile and Embedded Platforms Daria Ershova, Alexander Gayer, Vladimir V. Arlazarov

TECHNICAL SESSION

T6/ Domain Adaptation and Generalization: Addressing in Vision-Language Models and Medical Imaging Tasks

13:30-15:30, 20 Oct. @ Henri IV A

Chair: Imran A. Zualkernan, *American University of Sharjah, UAE*

Paris Time	ID	Presenter	Affiliation
13:30-13:45	T6-1	Maria Oniga	National University of Science and Technology POLITEHNICA Bucharest, Romania
13:45-14:00	T6-2	Safa Hlawa	Sousse University, Tunisia
14:00-14:15	T6-3	Anubhav Elhence	Birla Institute of Technology and Science - Pilani, India
14:15-14:30	T6-4	Ebru Sayilgan	İzmir University of Economics, Turkey
14:30-14:45	T6-5	Imran Zualkernan	American University of Sharjah, United Arab Emirates
14:45-15:00	T6-6	Ebru Sayilgan	İzmir University of Economics, Turkey
15:00-15:15	T6-7	Eulàlia Puig Vilardell	University of Tartu, Estonia
15:15-15:30	T6-8	Mohammad Farukh Hashmi	National Institute of Technology Warangal, India

Details

ID	Title and Authors
T6-1	Hyperspectral Imaging-Based Framework for Automated Detection of Dysplastic Melanocytes in Dermatopathology Maria Oniga, Mona Mihăilescu, Alina Elena Sultana, Mădălina Chivu, Irina Tudose, Olguța Anca Orzan, Andrei Marin
T6-2	MADViT: Multi-view Alzheimer's Disease Detection based on Vision Transformer Networks Safa Hlawa, Nadra Ben Romdhane, Emna Fendri
T6-3	Medical Image Retrieval Using Multimodal Vector Similarity Anubhav Elhence, Rishi Garg, Vinay Chamola
T6-4	Video Game-Driven EEG Signal Classification for Rehabilitation Applications Using LSTM Networks Yigit Saglam, Tugce Gulseren Tezel, Hezzal Kucukselbes, Ebru Sayilgan
T6-5	Fine-Tuning Vision – Language Models Enables Robust Classification of Naturally Imbalanced Camera Trap Images Nesreen Rahmeh, Maryam Gharaibeh, Imran Zualkernan, Andrew Gardner, Altaf Habib
T6-6	Deep Learning-Driven Classification of Bone Fractures for Emergency and Disaster Response Applications Tugce Gulseren Tezel, Abdullah Yigit Saglam, Hezzal Kucukselbes, Ebru Sayilgan
T6-7	Five Dimensional Interferenceless Coded Aperture Correlation Holography with a Vortex Filter Eulàlia Puig Vilardell, Narmada Joshi, Joseph Rosen, Tauno Kahro, Kaupo Kukli, Darius Gailevičius, Saulius Juodkazis, Vijayakumar Anand
T6-8	An Efficient Pneumonia Detection in Chest X-ray Images using EfficientNetB4 with Attention Mechanism Mohammad Farukh Hashmi, Chenna Vijay, Amreen Aijaz Husain

TECHNICAL SESSION

T7/ Machine Vision and Visualization

16:00-17:45, 20 Oct. @ Navarre

Chair:

Paris Time	ID	Presenter	Affiliation
16:00-16:15	T7-1	Ahmet Gökhan POYRAZ	Doğu Pres Otomotiv ve Teknik Sanayi ve Tic. A.Ş., Turkey
16:15-16:30	T7-2	Imen Chtourou	Universite côte d'azur, France
16:30-16:45	T7-3	Alireza Ghasemieh	Toronto Metropolitan University, Canada
16:45-17:00	T7-4	Fati Oiza SALAMI	Université Paris Est Créteil (UPEC), France
17:00-17:15	T7-5	Imen Chtourou	Universite côte d'azur, France
17:15-17:30	T7-6	Vlad-Gabriel Popescu	National University of Science and Technology POLITEHNICA, Romania
17:30-17:45	T7-7	Iker Gondra	St. Francis Xavier University, Canada

Details

ID	Title and Authors
T7-1	Sub-Pixel Concentricity Estimation Algorithm for Industrial Machine Vision with an Accompanying Dataset Ahmet Gökhan POYRAZ
T7-2	Analysis of AI models Performance Under Various and Objectifying Conditions Imen Chtourou, Federico Paschetta, Salma Talib, Lucile Sassatelli
T7-3	TFM-VO: Transformer-Fused Multi-Scale Visual Odometry Alireza Ghasemieh, Rasha Kashef
T7-4	A Vision Mamba-Based Dual-Phase Self-Supervised Framework for Neonatal Jaundice Diagnosis Fati Oiza Salami, Youssef Mourchid, Muhammad Muzammel, Alice Othmani
T7-5	Olive Leaf Diseases Classification Based on Feature Fusion Using Vision Transformer and CNNs Imen Chtourou, Mayssa Frikha, Najla Bouarada Ghrab, Emna Fendri, Mohamed Hammami
T7-6	Inter-UAV Distance Estimation using a Variable Baseline Stereo Vision System Vlad-Gabriel POPESCU, Damian GORGOTEANU, Constantin LEVENȚIU, Cristian VIDAN, Lucian-Teodor GRIGORIE
T7-7	SAM-PMIL: Smoothness-Consistent Adversarial Masking Proposal- Based Multiple Instance Learning for Weakly Supervised Temporal Action Localization Moayadeldin Hussain, Iker Gondra

TECHNICAL SESSION

T8/ Digital Image Understanding and Imaging Technology

16:00-17:45, 20 Oct. @ Henri IV A

Chair:

Paris Time	ID	Presenter	Affiliation
16:00-16:15	T8-1	Alexander Gusev	Smart Engines Service LLC, Russia
16:15-16:30	T8-2	Roya Arian	Durham University, UK
16:30-16:45	T8-3	Jingfeng Yu	Ganjiang Innovation Academy, Chinese Academy of Sciences, China; Tsinghua University, China
16:45-17:00	T8-4	Edoardo Bianchi	Free University of Bozen-Bolzano, Italy
17:00-17:15	T8-5	Nabila Mansouri	Technopole of Sfax, Tunisia
17:15-17:30	T8-6	Taisiya Maksimova	Smart Engines Service LLC, Russia
17:30-17:45	T8-7	Narmada Joshi	University of Tartu, Estonia

Details

ID	Title and Authors
T8-1	Improving Signature Presence Detection in Identity Documents with Spatial Attention Mechanism Mikhail Repin, Alexander Gusev, Alexander Gayer, Vladimir Arlazarov
T8-2	SLOTMFound: Foundation-Based Diagnosis of Multiple Sclerosis Using Retinal SLO Imaging and OCT Thickness-maps Reyhaneh Esmailizadeh, Ali Aghababei, Sayeh Mirzaei, Roya Arian, Raheleh Kafieh
T8-3	UDRSim: An Underwater Dynamic Real-Time Multimodal Imaging Simulator Jingfeng Yu, Haiqing Wan, Zhongju Sun, Xunlong Ma, Ying He, Qianchuan Zhao
T8-4	SkillFormer: Unified Multi-View Video Understanding for Proficiency Estimation Edoardo Bianchi, Antonio Liotta
T8-5	Personalized Stable Diffusion Model for Olive Leaf Image Generation with Diseases Symptoms Nabila Mansouri, Sourour Ammar
T8-6	Attribute Localization in Semi-Structured Document Images Applying Cozzy Extractors Taisiya Maksimova, Pavel Bezmaternykh, Dmitry Sholomov
T8-7	Polarization-Resolved Coded Aperture Imaging Techniques Narmada Joshi, Vipin Tiwari, Tauno Kahro, Agnes Pristy Ignatius Xavier, Tatsuki Tahara, Aarne Kasikov, Kaupo Kukli, Saulius Juodkazis, Aile Tamm, Joseph Rosen, Vijayakumar Anand

TECHNICAL SESSION

T9/ Image Recognition and Pattern Recognition

16:00-17:30, 20 Oct. @ Henri IV B

Chair: Nguyen Thien Bao, *University of Economics Ho Chi Minh City, Vietnam*

Paris Time	ID	Presenter	Affiliation
16:00-16:15	T9-1	Nguyen Thien Bao	University of Economics Ho Chi Minh City, Vietnam
16:15-16:30	T9-2	Tobias Pettersson	University of Skövde, Sweden
16:30-16:45	T9-3	Dandan Wang	China University of Petroleum Beijing, China
16:45-17:00	T9-4	Alexander V. Gayer	OCR Studio, United Arab Emirates
17:00-17:15	T9-5	Lada Tolstenko	Federal Research Center “Computer Science and Control” RAS, Russia
17:15-17:30	T9-6	Kaouther Khazri Ayeb	University of Tunis, Tunisia

Details

ID	Title and Authors
T9-1	Real-time Feature Recognition of Cantaloupe Flowers and Buds in Greenhouse based on Deep Learning for Pollination Robot Le Minh Triet, Nguyen Minh Trieu, Nguyen Truong Thinh
T9-2	Real-Time OCR-Based Grocery Product Recognition with Orientation Alignment and Embedding-Driven Classification Tobias Pettersson, Maria Riveiro, Tuwe Löfström
T9-3	Precise Recognition and Localization of Drill Pipes Based on SBN-YOLO and Stereo Vision Dandan Wang, Laibin Zhang, Shengli Chu, Wenpei Zheng, Yifan Gan
T9-4	Real-time Automatic Water Meters Recognition on Edge Devices Alexander V. Gayer, Vladimir V. Arlazarov
T9-5	Detection of Photocopied Documents in Remote Identity Verification by Presence of the Paper Frame Lada Tolstenko, Aleksey Bursikov, Irina Kunina
T9-6	Hybrid CNN-GNN for Offline Handwritten Math Expression Kaouther Khazri Ayeb, Afef Kacem Echi

TECHNICAL SESSION

O1/ Computer-Assisted Imaging and Image Analysis

10:00-12:30, 22 Oct. @ Zoom ID: 845 9824 0312

Chair: Artem Nikonorov

Paris Time	ID	Presenter	Affiliation
10:00-10:15	O1-1	Emna Bouhajeb	University of Tunis El Manar, Tunisia
10:15-10:30	O1-2	Konyushenko Ivan Denisovich	Russian Academy of Sciences, Russia
10:30-10:45	O1-3	Daniyal Asif	Skolkovo Institute of Science and Technology, Russia; University of Sharjah, United Arab Emirates
10:45-11:00	O1-4	Volkov Vladislav Vladimirovich	Russian Academy of Sciences, Russia
11:00-11:15	O1-5	Mikhail Lazukov	Moscow Institute of Physics and Technology, Russia; NVI Solutions LLC, Russia
11:15-11:30	O1-6	Tendai Mapungwana Chikake	Moscow Institute of Physics and Technology, Russia
11:30-11:45	O1-7	Inna Bukreeva	Institute of Nanotechnology CNR, Italy
11:45-12:00	O1-8	Taskina Larisa A.	Samara National Research University, Russia
12:00-12:15	O1-9	Leonid Levin	Smart Engines Service LLC, Russia
12:15-12:30	O1-10	Nikita Kablov	Smart Engines Service LLC, Russia

Details

ID	Title and Authors
O1-1	Hierarchical Capsule Networks with Domain-Specific Pre-training for Robust Audio-Visual Speech Recognition Emna Bouhajeb, Chiraz Jlassi, Najet Arous
O1-2	Bulk Cargo Volume Measurement for Moving Dump Trucks with a Single-Layer LiDAR and a Camera Bocharov D.A., Kokhan V.V., Konyushenko I.D., Resniansky A.Yu., Nikolaev I.P., Nikolaev D.P.
O1-3	Optimized Explainable Deep Learning Model for Lung Cancer Diagnosis from Computed Tomography Images Daniyal Asif, Svetlana Illarionova, Rifat Hamoudi, Alexander Bernstein, Maxim Sharaev
O1-4	P-CVD-SWIN: A Parameterized Neural Network for Image Daltonization V.V. Volkov, P.V. Maximov, N.B. Alkzir, S.A. Gladilin, D.P. Nikolaev, I.P. Nikolaev
O1-5	RANSAC-Scaled Depth: A Dual-Teacher Framework for Metric Depth Annotation in Data-Scarce Scenarios Lazukov M.V., Shoshin A.V., Belyaev P.V., Shvets E.A.
O1-6	Pseudo-Boolean Polynomial Method for Interpretable Dimensionality Reduction: A Paradigm Shift from Abstract to Meaningful Feature Extraction Tendai M. Chikake, Boris I. Goldengorin, Panos M. Pardalos
O1-7	High-Resolution Mapping of the Human Olfactory Bulb Using X-Ray Phase Contrast Tomography and Virtual Surface Unfolding Inna Bukreeva, Sergey Saveliev, Alessia Cedola, Michela Fratini, Olga Junemann
O1-8	A Method for Analyzing Biometric Data to Assess the Cognitive Load and Stress Resistance of a UAV Operator during Mission Planning Taskina L.A., Abakumov L.A., Kazarkin T.D.
O1-9	Fast and Memory-Efficient Convolution on ARM for Computer Vision Neural Networks Levin L., Trusov A., Limonova E.

O1-10	A Novel Composite Metric Loss for Offline Handwritten Chinese Character Recognition with CNNs Nikita Kablov, Alexander Sheshkus, Vladimir L. Arlazarov

TECHNICAL SESSION

O2/ Intelligent Detection Models and Application Technologies

10:00-12:15, 22 Oct. @ Zoom ID: 829 5953 5528

Chair: Nhat Luong Nhieu, *University of Economics Ho Chi Minh City, Vietnam*

Paris Time	ID	Presenter	Affiliation
10:00-10:15	O2-1	Ulrik Söderström	NorrSpect AB, Sweden
10:15-10:30	O2-2	Wafa Amari	National Engineering School of Gabes, RTIM-Lab, Tunisia
10:30-10:45	O2-3	Laatiri Youssef	Higher Institute of Computer Science and Communication Technology of Sousse (IsitCom), Tunisia
10:45-11:00	O2-4	Cong-Viet-Thanh Nguyen	University of Science, Viet Nam National University Ho Chi Minh City, Vietnam
11:00-11:15	O2-5	Xinhao Xiang	University of California, Davis, United States
11:15-11:30	O2-6	Minh-Triet Tran	University of Science VNU-HCM, Vietnam
11:30-11:45	O2-7	Laatiri Youssef	Higher Institute of Computer Science and Communication Technology of Sousse (IsitCom), Tunisia
11:45-12:00	O2-8	Zina TAYARI	University of Gabes, Tunisia
12:00-12:15	O2-9	Nhat Luong Nhieu	University of Economics Ho Chi Minh City, Vietnam

Details

ID	Title and Authors
O2-1	Quality Assurance with Visual Inspection in Sheet Metal Forming Process for Automotive Industry Alf Andersson, Ulrik Söderström, Aman Malhotra
O2-2	Spectro-Temporal Audio Fusion for Early Parkinson's Detection Wafa Amari, Hasna Njah, Hanin Hamdi, Ines Njah
O2-3	Intelligent Detection of Tomato Leaf Diseases: An Explainable Deep Learning Approach Laatiri Youssef, Mohamed Mahjoub
O2-4	Malaria Detection System with Machine Learning and Deep Learning Techniques Cong-Viet-Thanh Nguyen, Tan-Nguyen-Dat Le, Hai-Dang Nguyen, Minh-Triet Tran
O2-5	FusionViT: Hierarchical 3D Object Detection via Lidar-Camera Vision Transformer Fusion Xinhao Xiang, Jiawei Zhang
O2-6	Patch-Based Localized Artifact Enhancement for Deepfake Detection Minh-Hoang Le, Minh-Khoa Le-Phan, Minh-Triet Tran, Trong-Le Do
O2-7	A CNN-LSTM Hybrid Framework with Attention Mechanism for Robust Tomato Disease Detection Laatiri Youssef, Mohamed Mahjoub
O2-8	Adaptive Neuroscience: Leveraging Liquid Neural Networks for Early Parkinson's Disease Detection Zina TAYARI, Mourad ZAIED
O2-9	A T-Spherical Fuzzy MEREC-CoCoSo Framework for Evaluating Machine Vision Systems in Manufacturing Quality Control Nhat Luong Nhieu, Hoang Kha Nguyen, Nguyen Truong Thinh

TECHNICAL SESSION

O3/ Computer Vision and Visualization

13:00-15:15, 22 Oct. @ Zoom ID: 845 9824 0312

Chair:

Paris Time	ID	Presenter	Affiliation
13:00-13:15	O3-1	Minh-Triet Tran	University of Science VNU-HCM, Vietnam
13:15-13:30	O3-2	Khin Cho Win	Indian Institute of Technology Hyderabad, India
13:30-13:45	O3-3	Emna Bouhajeb	University of Tunis El Manar, Tunisia
13:45-14:00	O3-4	Kaisen Ye	Zhejiang University, China
14:00-14:15	O3-5	Nam-Quan Nguyen	University of Science VNUHCM, Vietnam
14:15-14:30	O3-6	Khin Cho Win	Indian Institute of Technology Hyderabad, India
14:30-14:45	O3-7	Ngoc-Thao Nguyen	University of Science, Vietnam National University Ho Chi Minh City, Vietnam
14:45-15:00	O3-8	Emna Othmen	ISITcom, Tunisia
15:00-15:15	O3-9	Ngoc-Thao Nguyen	University of Science, Vietnam National University Ho Chi Minh City, Vietnam
15:15-15:30	O3-10	Umar Farooq	University of New South Wales, Australia

Details

ID	Title and Authors
O3-1	InnoGuard: Secure Authorship Verification Using ECC-Encoded Watermarks and Randomized Embedding for AIGC-Resilient Images Tuan-Viet Tran, Dinh-Tung Nguyen, Minh-Triet Tran, Trong-Le Do
O3-2	CFE-FER: Channel-Guided Feature Enhancement for Robust Facial Expression Recognition Khin Cho Win, Zahid Akhtar, C. Krishna Mohan
O3-3	Quality-Adaptive Late Fusion for Capsule-Based Audio-Visual Speech Recognition Emna Bouhajeb, Chiraz Jlassi, Najet Arous
O3-4	Hy-Facial: Hybrid Feature Extraction by Dimensionality Reduction Methods for Enhanced Facial Expression Classification Xinjin Li, Yu Ma, Kaisen Ye, Jinghan Cao, Minghao Zhou, Yeyang Zhou
O3-5	LH-MemUDA: Low-High Resolution Memory Black-box Unsupervised Domain Adaptation Nam-Quan Nguyen, Gia-Han Nguyen-Hoang, Uy Huynh-Tran, Minh-Triet Tran, Trong-Le Do
O3-6	Orthogonality-Aware Projection-Based Feature Enhancement for Fine-Grained Facial Expression Recognition in the Wild Khin Cho Win, Zahid Akhtar and C. Krishna Mohan
O3-7	PSinSR: Perceptual Single Step for Diffusion-Based Image Super Resolution Van-Chi Truong, Ngoc-Thao Nguyen
O3-8	Enhancing One-step Diffusion Models using GANs with Application to Mental Health Mindfulness Emna Othmen, Mohamed Yassine Landolsi, Lotfi Ben Romdhane
O3-9	CD-HMA: Degradation-aware Hybrid Multi-Axis Attention Network for Blind Image Super-Resolution Tuan-Khai Pham-Gia, Ngoc-Thao Nguyen
O3-10	Asthma Identification through Multimodal Data Fusion: Towards Reliable Clinical Decision Support Umar Farooq, Matt Trinh, Angelica Ly, Asif Ameer, Imran Razzak, Sonit Singh

TECHNICAL SESSION

O4/ Image Recognition and Segmentation

13:00-15:30, 22 Oct. @ Zoom ID: 829 5953 5528

Chair: Gissella Bejarano, *Marist College, United States*

Paris Time	ID	Presenter	Affiliation
13:00-13:15	O4-1	Usma Niyaz	Indian Institute of Technology Ropar, India
13:15-13:30	O4-2	Ngoc-Thao Nguyen	University of Science, Vietnam National University Ho Chi Minh City, Vietnam
13:30-13:45	O4-3	Shreyan Kundu	Institute of Engineering and Management, India
13:45-14:00	O4-4	Nam-Khanh Tran	University of Science, Vietnam National University Ho Chi Minh City, Vietnam
14:00-14:15	O4-5	Shreyan Kundu	Institute of Engineering and Management, India
14:15-14:30	O4-6	Salvatore Onorato	University of Catania, Italy
14:30-14:45	O4-7	Marco Buzzelli	University of Milano-Bicocca, Italy
14:45-15:00	O4-8	Umair Haroon	Universitat de Barcelona, Spain
15:00-15:15	O4-9	Theofanis Kalampokas	Democritus University of Thrace, Greece
15:15-15:30	O4-10	Gissella Bejarano	Marist College, United States

Details

ID	Title and Authors
O4-1	ShapeDistill: Shape-Constrained Knowledge Distillation for Medical Segmentation Usma Niyaz, Deepti Bathula
O4-2	UNet-HoVerGNN: Structured Graph Integration into HoVerNet for Enhanced Nuclei Segmentation and Classification Tuan-Anh Yang, Hai-Dang Nguyen, Ngoc-Thao Nguyen
O4-3	Is Negative Correlation Learning a Solution for Cross Domain Colon Polyp Segmentation? Shreyan Kundu, Souradeep Mukhopadhyay, Daison Darlan, Rammohan Mallipeddi
O4-4	Foundation-Guided Active Learning for Efficient Ultrasound Image Segmentation Nam-Khanh Tran, Dac-Phu Phan-Le, Minh-Triet Tran, Hai-Dang Nguyen
O4-5	GOOSE-Net: Gompertz-augmented Overlapping Output-based Segmentation Enhancement for Detecting Colon Polyp Shreyan Kundu, Souradeep Mukhopadhyay, Rammohan Mallipeddi
O4-6	RGB-Thermal Drone Imaging for Semantic Segmentation and Anomaly Detection in Photovoltaic Panels Salvatore Onorato, Alessio Barbaro Chisari, Ahmed Majdoub, Luca Guarnera, Roberto Leotta, Sebastiano Battiato
O4-7	Spectral Band Attribution in Historical Ink and Substrate Recognition Marco Buzzelli, Ana Belén López-Baldomero, Francisco Moronta-Montero, Eva Maria Valero
O4-8	VolE-Complete: Enhancing Food 3D Reconstrucction anv Volume Estimation with Symmetry-Guided Point Cloud Completion Umair Haroon, Ahmad Almughrabi, Ricardo Marques, Petia Radeva
O4-9	Quantum-Assisted Visual Quality Assessment of Pomegranates Using Hybrid Transfer Learning Theofanis Kalampokas, Eleni Vrochidou, George Papakostas

O4-10	WholeBodyPose: A Unified End-to-End Framework for Sign Language Recognition and Pose-Based Training Data Cristian Lazo, Renato Castro, Mauricio Espinosa, Gissella Bejarano

POSTER SESSION

P/ Computer-Aided Drawing and Intelligent Image Processing Technology

15:30-16:00, 20 Oct. @ Salon Medicis

Chair:

ID	Title & Authors& Affiliation
P1-1	Single Haze Removal Method using Peplography **Seungwoo Song**, Jongpil Jeong, Myungjin Cho, Min-Chul Lee Kyushu Institute of Technology, Japan
P1-2	Improved Test Bench for Evaluating Step Responses to Lighting Changes of Monocular Perception Systems **Fabian Ulreich**, Martin Ebert Technische Hochschule Ingolstadt, Germany
P1-3	Advanced Scattering Media Removal by Modified ARMS and Restoration of Color Information Jongpil Jeong, Myungjin Cho, **Min-Chul Lee** Kyushu Institute of Technology, Japan
P1-4	Evaluation of Pre-Trained Convolutional Networks for Beverage Cans Defect Inspection **Pamela Patricia Vera-Tizatl**, Jacobo Sandoval-Gutiérrez, Daniel Librado-Martínez and José Alberto Zamora-Justo Universidad Autónoma Metropolitana Unidad Lerma, Mexico
P1-5	Automatic Detection and Segmentation of Squamous Cervical Cells in Papanicolaou Smear-Images Dumitru-Viorel Zăbavă, Rareş Ştefan Teodorescu, **Mihai Neghina**, Maria Oniga, Florian Vintilă Armăşescu Lucian Blaga University of Sibiu, Romania
P1-6	Towards High-Quality 3D Scans of Orchards for Automated Pruning **Laurens Diels**, Michiel Vlaminck, Bas Boom, Wilfried Philips, Hiep Luong Ghent University - imec, Belgium
P1-7	Comparative Analysis of Pre-trained CNN Architectures for Lung Disease Classification **Jose Alberto Zamora-Justo**, Arturo Cruz-Mendoza and Alejandro Muñoz-Diosdado Instituto Politécnico Nacional, Mexico
P1-8	Multi-Resolution PTZ-Camera and AI-Based Monitoring System for Real-Time Industrial Safety on Aerial Work Platforms and Forklifts **Minho Son**, Il Ryong Kweon PODO inc., South Korea
P1-9	Improving Meta-Learned Loss Function Accuracy and Convergence Speed Through Normalisation **Dalton Gray**, Christopher J Holder Newcastle University, United Kingdom

*Conference organizer does not provide printing service, please prepare and print out your poster and bring to conference site by yourself.

Lab Visit

Exclusive Tour of Google Arts & Culture Lab in Paris!

We're thrilled to announce a special, exclusive opportunity for ICMV attendees! Google has offered our conference a private tour of their innovative Google Arts & Culture Lab in Paris. This is a unique chance to delve into the cutting-edge work being done at the intersection of technology and culture. You'll get an insider's look at how Google is leveraging Artificial Intelligence (AI), advanced digital tools, and immersive experiences to preserve, explore, and showcase the world's cultural heritage.

Date: Tuesday, October 21st
Time: 10:00-11 AM
Location: Google's Headquarters, 8 Rue de Londres, 75009 Paris
Capacity: A strict maximum of **50** participants

Due to the exclusive nature and limited capacity of this tour, pre-registration will be mandatory.

Please fill the online form below for the visit, we only collect the first 50 filled delegates, and the info collection will end by Oct. 8.
http://registration-link.mikecrm.com/WXVriM6

Please note: All participants must arrive at Google's Headquarters at least 30 minutes prior to the start of the tour (by 9:30 AM) for security checks and group coordination.
We highly recommend signing up promptly to secure your spot for this fascinating and insightful experience!

Top Attractions in Paris

La tour Eiffel


A symbol of Paris and more generally of France, the Eiffel Tower, built by Gustave Eiffel for the 1889 World's Fair, is one of the world's most visited monuments. Visiting the Tower, and seeing its historic gardens and the breathtaking view of Paris from the top is an incredible experience. Walking out onto the glass platform on the first floor offers the unique sensation of walking in the void! In winter or in summer, you can enjoy a break on the terrace, 57 metres above the ground.

Musée du Louvre


Formerly a royal palace, the Louvre embraces eight centuries of French history. Intended as a universal museum since its creation in 1793, its collections – among the finest in the world – span several thousands of years and a territory that extends from America to the confines of Asia. The Louvre is a universal museum with eight curatorial departments: Egyptian Antiquities; Near Eastern Antiquities; Greek, Etruscan, and Roman Antiquities; Paintings; Sculptures; Decorative Arts; Prints and Drawings; and Islamic Art. Some 35,000 works of art are on display, including world-famous masterpieces such as the Winged Victory of Samothrace, the Seated Scribe, the Winged Bulls of Khorsabad, the Mona Lisa and Michelangelo's Slaves, and parts of the palace, such as the Napoleon III Apartments, are works of art in their own right.

Arc de Triomphe


If anything rivals the Eiffel Tower as the symbol of Paris, it's this magnificent 1836 monument to Napoléon's victory at Austerlitz (1805), which he commissioned the following year. The most famous of the four high-relief panels at the base is to the right, facing the arch from the av des Champs-Élysées side. It's entitled Départ des Volontaires de 1792 (Departure of the Volunteers of 1792) and is also known as La Marseillaise (France's national anthem). Higher up, a frieze running around the whole monument depicts hundreds of figures, each one 6.6ft (2m) high.

Sainte-Chapelle


Visit Sainte-Chapelle on a sunny day when Paris' oldest, finest stained glass (1242–48) is at its dazzling best. The chapel is famous for its stained-glass windows, holy relics, and concerts. Enshrined within the city's original, 13th-century Palais de Justice (Law Courts), this gem-like Holy Chapel is Paris' most exquisite Gothic monument, completed in 1248. It was conceived by Louis IX to house his personal collection of holy relics, including the famous Holy Crown. Some 70% of the stained glass, covering a total area of 640 square meters, is original. To understand the biblical stories illustrated in the 1113 scenes, view or 'read' the windows from left to right, and from bottom to top.

Cathédrale Notre Dame de Paris


While its interior is closed off to visitors following the devastating fire of April 2019, this masterpiece of French Gothic architecture remains the city's geographic and spiritual heart. Its grand exterior, with its two enduring towers and flying buttresses, is rightly still an alluring attraction to countless visitors.

Musée Rodin


Even if you're not an art lover, it is worth visiting this high-profile art museum to lose yourself in its romantic gardens. Sculptor, painter, sketcher, engraver and collector Auguste Rodin donated his entire collection to the French state in 1908 on the proviso that it dedicate his former workshop and showroom, the beautiful 1730 Hôtel Biron, to displaying his works. This is where he lived and worked while in Paris. Rodin's artwork is not only installed in the mansion itself, but also on its rose-filled garden—one of the most peaceful places in central Paris.

MEMO