Welcome to ICCV 2023

ICCV23
PARIS

CVF

IEEE COMPUTER SOCIETY

General chairs

Jana Kosecka
GMU

Jean Ponce
ENS/NYU

Cordelia Schmid
Inria/Google

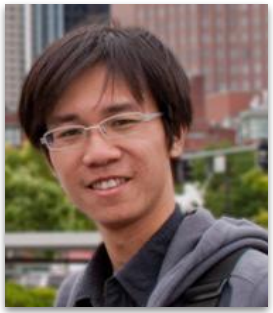
Andrew Zisserman
Oxford/Deepmind

Program chairs

Lourdes Agapito
UCL

Yasu Furukawa
SFU

Kristen Grauman
UT Austin



Kaiming He
FAIR

Ivan Laptev
MBZUAI

Finance chairs

Gérard Medioni
Amazon & USC

Ramin Zabih
Cornell Tech & Google

Diversity chairs

Angjoo Kanazawa
University of California

Gül Varol
Ecole des Ponts

Michael Black
Max Planck Institute

Publications

Gaurav Sharma
TensorTour and IIT Kanpur

Frederic Jurie
ENSICAEN

Industrial Relations

Patrick Perez
Valeo

Rahul Sukthankar
Google

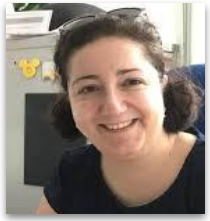
Organization Chairs

Laurent Najman
Université Gustave Eiffel

Hugues Talbot
Universite Paris-Saclay

Workshop and Tutorial chairs

- 56 workshops (34 half day, 22 full day)
- 10 tutorials (1 full day 9 half day)



Dima Damen
University of Bristol

Judy Hoffman
Georgia Tech

Demo chairs

- Total 34 applications were received, 27 accepted
- Demos each day of the main conference (10:30am – 4pm).
- “Best Demo Award” (100 Euro award)

Minsu Cho
POSTECH

Bumsub Ham
Yonsei University

Jinwei Ye
George Mason

Elena Sizikova
NYU

Doctoral Consortium chairs

Opportunity for recent grads/clode-to-complete PhD
Students to interact with experienced researchers

- One-to-one matching of students to mentors
- Round-table discussions
- Discuss career plans and research
- 38 students

D. Larlus
Naver Labs

K. Alahari
INRIA

Social Media chairs

Contribute with posts, tweets, likes

twitter.com

#ICCV2023
@ICCVConference

weibo.com

微博

Kostas Derpanis
York University

Boqing Gong
Google

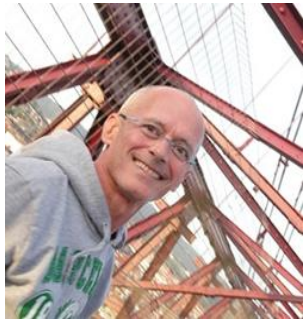
Abby Stylianou
Saint Louis University

Thanks to all of our chairs for an amazing amount of hard work !!

And now a very special thank you to three groups of people

Local Organization

PCO: Dakini
Local site: VIParis



François Tapissier
Dakini-PCO

Ludivine Fluneau
Dakini-PCO

Laurent Najman
Université Gustave Eiffel

Logistics Chairs

Oriane Siméoni, Valeo

Renaud Marlet Ecole des Ponts ParisTech / Valeo

And Chrystel Orsini, Laura Reeve, Véronique Parasote
Athanaël Guitard, Guillaume Daynes, and Manon Baby

Plus 160 student volunteers !!

Thank you !!!

Diversity chairs

Angjoo Kanazawa
University of California

Gül Varol
Ecole des Ponts

Michael Black
Max Planck Institute

- Travel support for attendees
  - 551 applications
  - 164 registration waivers
  - 128 travel grants

- High school outreach event
  - 40 high school students
  - Co-organized with “Filles, Maths, Informatique” (Women, Maths, CS)
  - Introduction to computer vision talk, tours of demos, posters, expo, orals
    - Big thanks to all volunteers and mentors!

https://sites.google.com/view/iccv-2023-outreach-event/

- Onsite childcare services
- Supported by a 25k donation from DeepMind, and 200k donation from CVF and IEEE-CS

Thank you !!!

Publication chairs

Gaurav Sharma
TensorTour and IIT Kanpur

Frederic Jurie
ENSICAEN

Thank you !!!

Honorary Chair: Olivier Faugeras

Pioneering work on
- 2D and 3D object recognition under geometric constraints
- Structure from motion (wrote the book at the time)
- Multi-view geometry (introduced and named the fundamental matrix)
- Level sets for surface reconstruction from multiple views
- Started ECCV. Ran IJCV for many years

Switched to neuroscience at the peak of computer vision career!

Honorary Chair: Katsushi Ikeuchi

Responsible for early work in the field on:

- Shape representation from extended Gaussian images to deformable surfaces
- Shape from shading and physics-based vision
- Learning from demonstrations
- Applications of vision and robotics to cultural heritage preservation

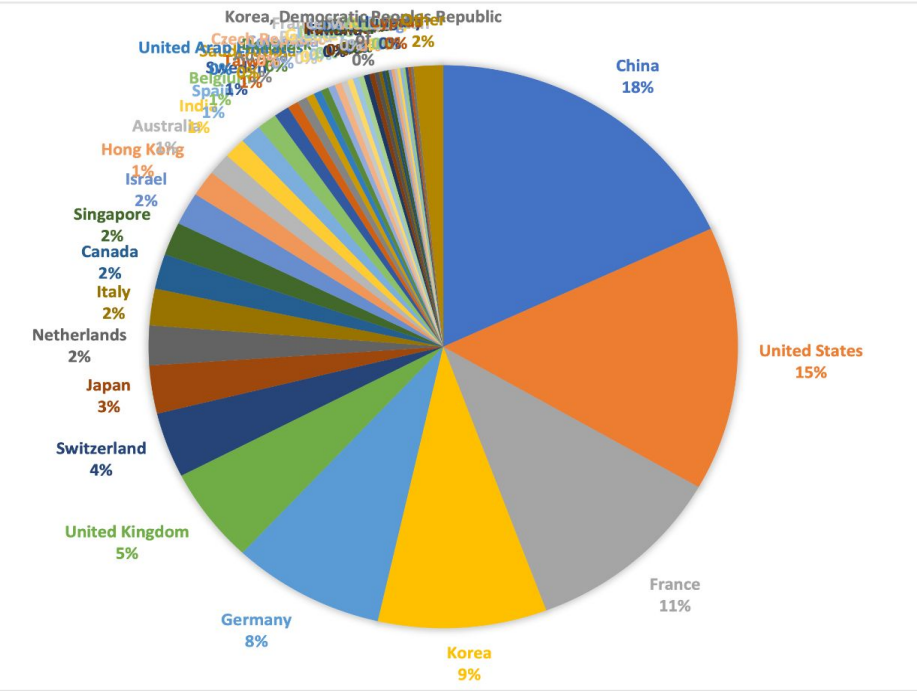
Honorary Chair: Joe Mundy

Responsible for early work in the field on:

- Recognizing 3D objects in an image
- The importance and use of geometry in shape representation and matching
- The importance of projective geometry and invariance
- Industrial applications of computer visio

Joe is attending ICCV, so you can meet with him

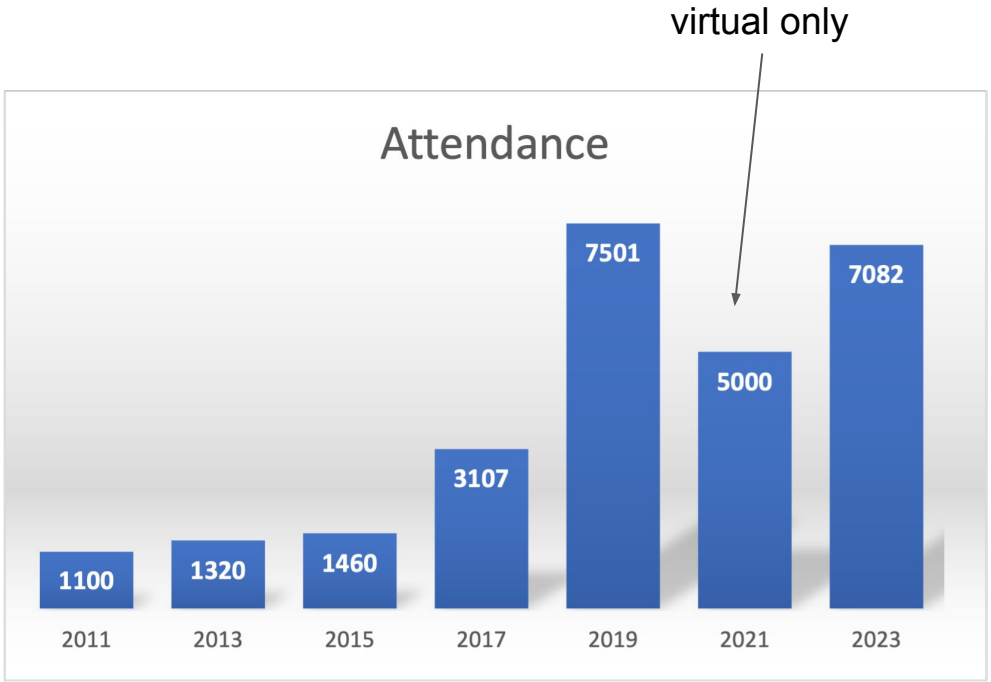
Attendance

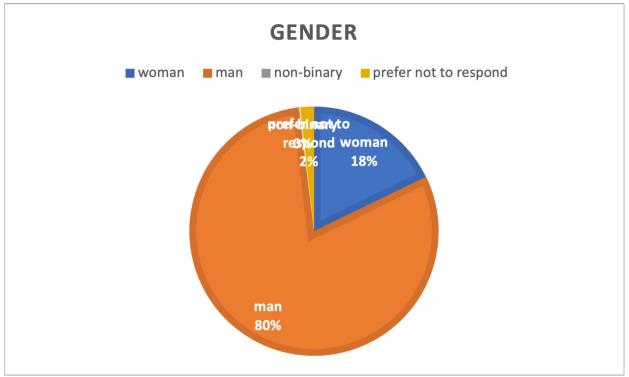


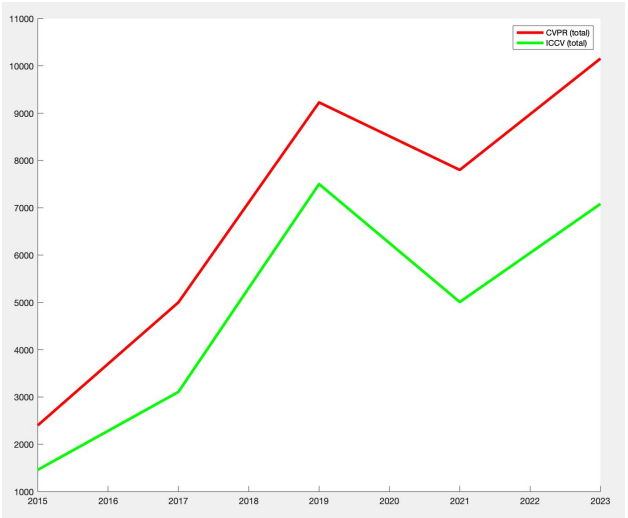
Attendees from 84 countries/regions

China 1233
United States 1034
France 749
Korea 630
Germany 569
UK 374
Switzerland 255
Japan 188
Netherlands 155
Italy 143
Canada 136
Singapore 130
Israel 128
Hong Kong 102
Australia 87
India 81
Spain 79
Belgium 75
Sweden 57
Taiwan 41
Austria 37
Saudi Arabia 30
United Arab Emirates
Denmark 29
Colombia 26
Czech Republic 26
Poland 23
Greece 22
Turkey 21
Mexico 21
Finland 21
Romania 19
Croatia 17
Armenia 12
Slovenia 12
Ethiopia 12
Luxembourg 11
Vietnam 11
Norway 10
Brazil 10
Hungary 10
Cyprus 10
Korea Dem 10
Other 37 countries < 10

Attendance in numbers







As of yesterday: 7335 registrations incl. 6761 in-person

COVID

- Please be careful
- We have 12,000 masks at registration desk
- We have 500 rapid tests if you feel like you may have symptoms. Ask registration desk

Sponsors & Exhibit

- 47 exhibitor booths
- co-organized with HEI

Ultimate

Google DeepMind

Platinum

amazon | science

ANT RESEARCH

Google Research

Meta AI

Gold

Adobe

Valeo

Qualcomm

WAYVE

Baidu 百度

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scale

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LOUIS VUITTON

BOSCH
Invented for life

ZERO10

SONY

kolena

TikTok

meshcapade

Bronze

Research
A SCIENCE PARTNER JOURNAL

Hugging Face

Snap Inc.

sama

Kaiber

TELUS International

KOGNIC>

SCALETORCH

Overall Meeting Sponsors

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Technical Program

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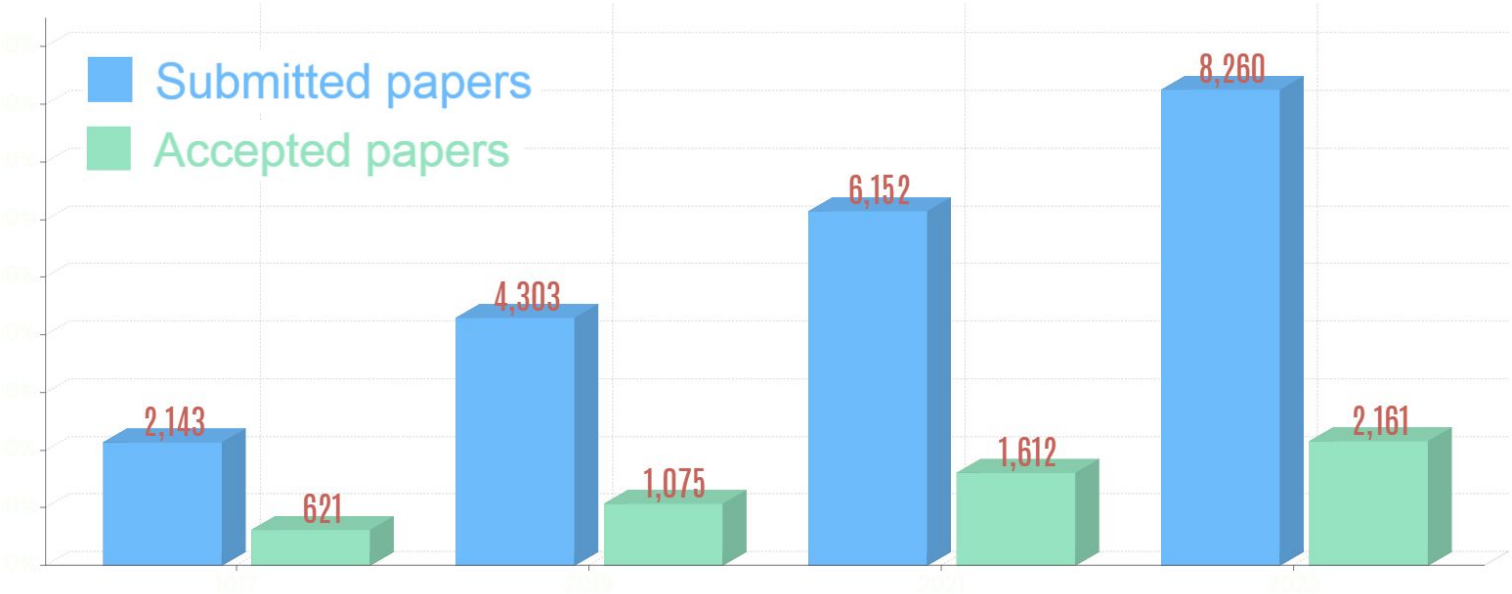


Acceptance rate: 29% 25% 26% 26%

ICCV17 ICCV 2019 Seoul, Korea 2021 ICCV ICCV23 PARIS

311 ACs

6 990 Reviewers

25 221+ Authors

25 558 reviews received → 3.16 reviews per paper

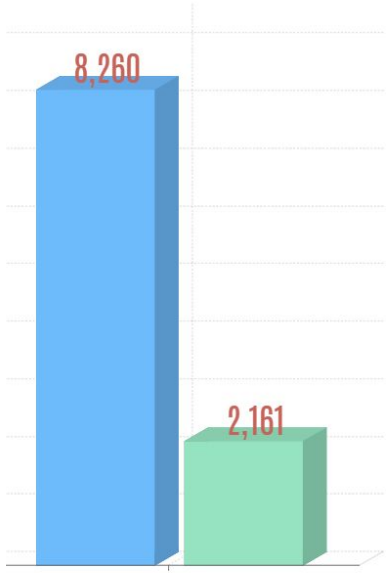
- 1 320+ emergency reviews
- 175 paper with 5 reviews … 1 paper with 10 reviews

3+ reviews for each paper released on time before rebuttal

Accept/Reject decisions

- Taken by AC triplets at virtual AC meetings
- Based on paper merits, i.e. no acceptance rate was imposed a-priori.

152 papers selected for oral presentations → 1.8% oral acceptance rate



26%

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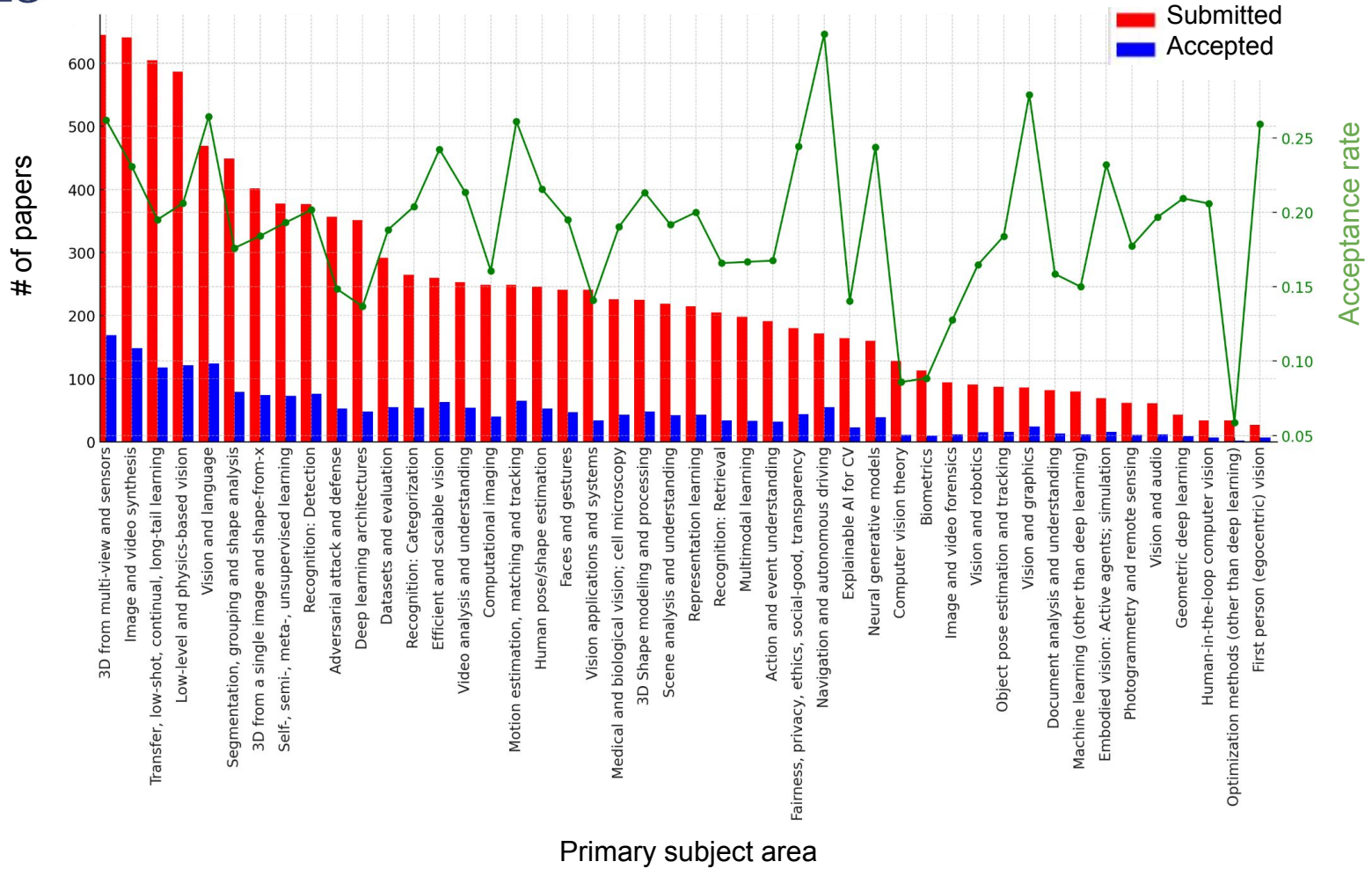
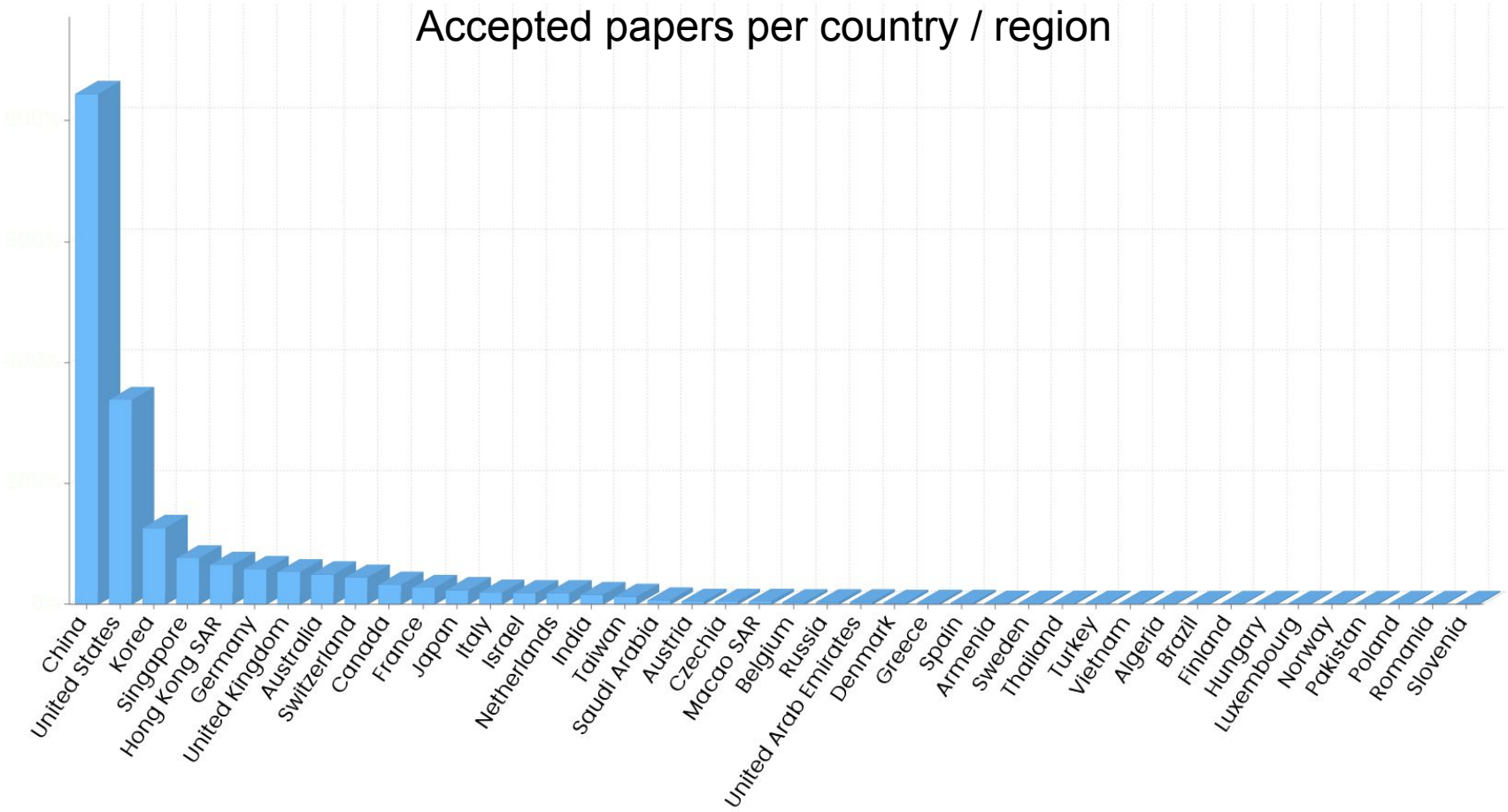


Accepted papers per country / region



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Why having talks?

- Efficient way to propagate information
  - Gives a glimpse of key new ideas and results in your area
  - Gives you exposure to ideas and results in other areas
- Visibility for the authors
- Posters can be easily overcrowded

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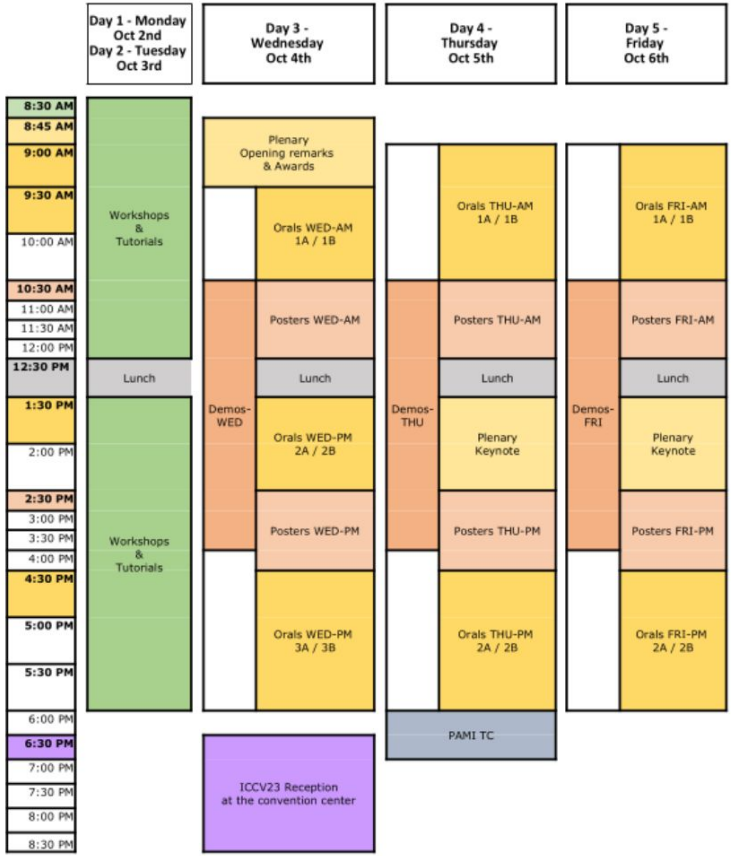
Program at a glance

- 2 Parallel tracks
- 14 Oral sessions
- 5-minute talks
- 30-minute blocks of 4 papers
- 10-minute Q&A at the end of each block

- 6 poster sessions
- Each oral is also a poster on the same day



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Keynote speakers

Dorsa Sadigh
Stanford
Interactive Learning in the Era of Large Models
Thursday 13:30-14:30 (Paris Nord)

Pushmeet Kohli
Google DeepMind
The potential of AI in advancing science and the importance of ensuring AI's responsible use
Friday 13:30-14:30 (Paris Nord)

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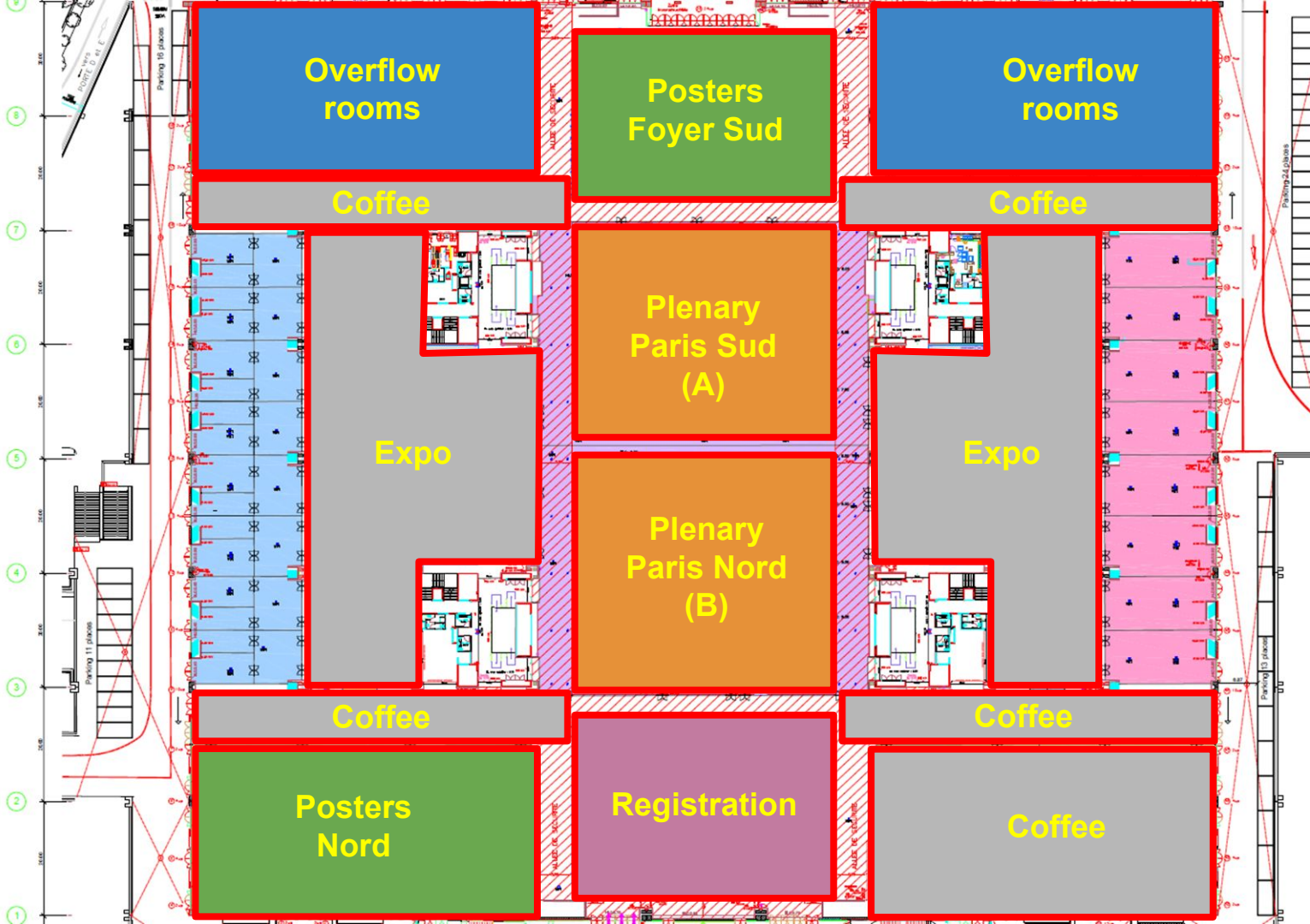
Floor plan



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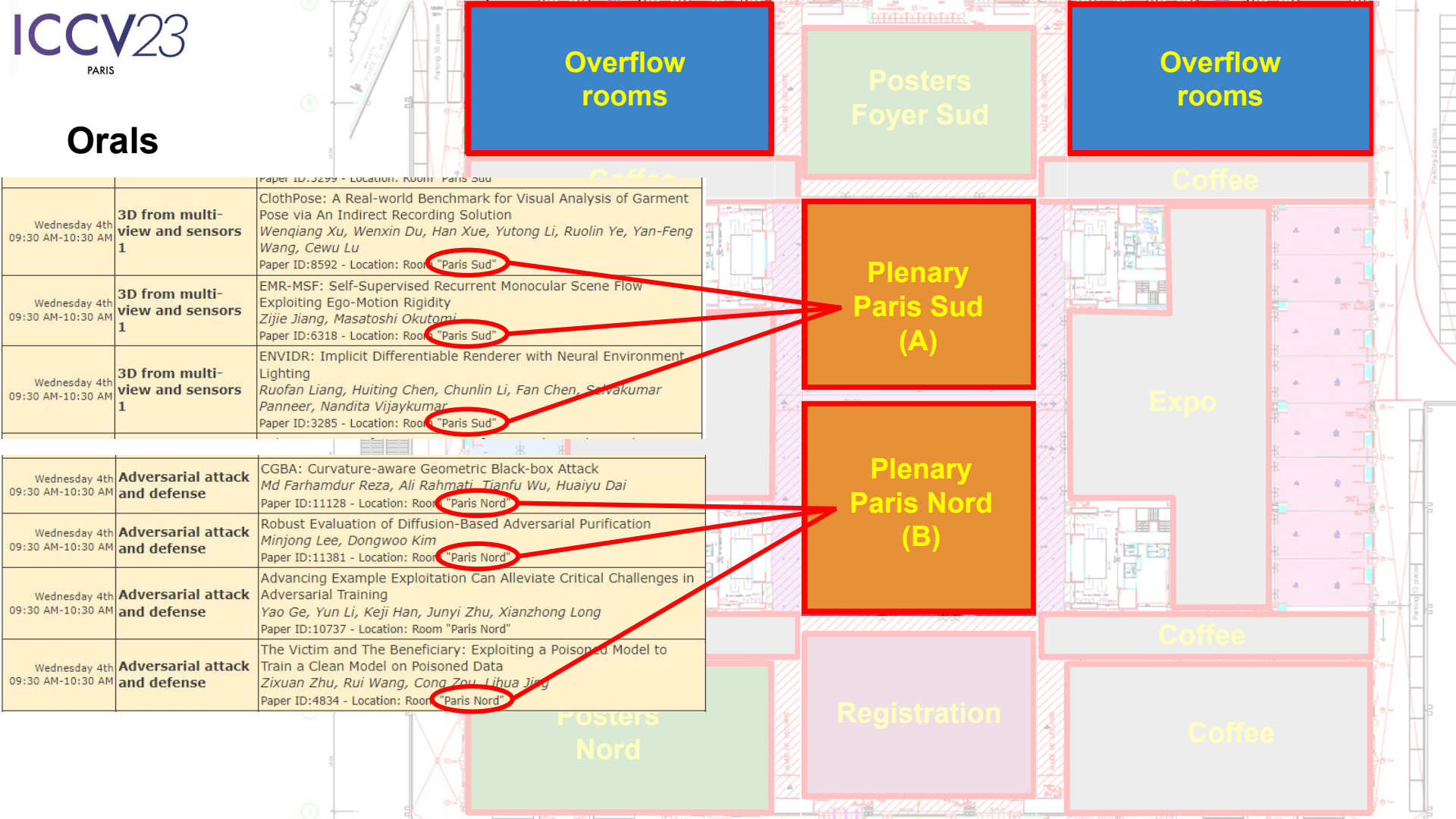
Orals

Wednesday 4th 09:30 AM-10:30 AM	**3D from multi-view and sensors 1**	ClothPose: A Real-world Benchmark for Visual Analysis of Garment Pose via An Indirect Recording Solution *Wenqiang Xu, Wenxin Du, Han Xue, Yutong Li, Ruolin Ye, Yan-Feng Wang, Cewu Lu* Paper ID:8592 - Location: Room "Paris Sud"
Wednesday 4th 09:30 AM-10:30 AM	**3D from multi-view and sensors 1**	EMR-MSF: Self-Supervised Recurrent Monocular Scene Flow Exploiting Ego-Motion Rigidity *Zijie Jiang, Masatoshi Okutomi* Paper ID:6318 - Location: Room "Paris Sud"
Wednesday 4th 09:30 AM-10:30 AM	**3D from multi-view and sensors 1**	ENVIDR: Implicit Differentiable Renderer with Neural Environment Lighting *Ruofan Liang, Huiting Chen, Chunlin Li, Fan Chen, Selvakumar Panneer, Nandita Vijaykumar* Paper ID:3285 - Location: Room "Paris Sud"
Wednesday 4th 09:30 AM-10:30 AM	**Adversarial attack and defense**	CGBA: Curvature-aware Geometric Black-box Attack *Md Farhamdur Reza, Ali Rahmati, Tianfu Wu, Huaiyu Dai* Paper ID:11128 - Location: Room "Paris Nord"
Wednesday 4th 09:30 AM-10:30 AM	**Adversarial attack and defense**	Robust Evaluation of Diffusion-Based Adversarial Purification *Minjong Lee, Dongwoo Kim* Paper ID:11381 - Location: Room "Paris Nord"
Wednesday 4th 09:30 AM-10:30 AM	**Adversarial attack and defense**	Advancing Example Exploitation Can Alleviate Critical Challenges in Adversarial Training *Yao Ge, Yun Li, Keji Han, Junyi Zhu, Xianzhong Long* Paper ID:10737 - Location: Room "Paris Nord"
Wednesday 4th 09:30 AM-10:30 AM	**Adversarial attack and defense**	The Victim and The Beneficiary: Exploiting a Poisoned Model to Train a Clean Model on Poisoned Data *Zixuan Zhu, Rui Wang, Cong Zou, Lihua Jing* Paper ID:4834 - Location: Room "Paris Nord"



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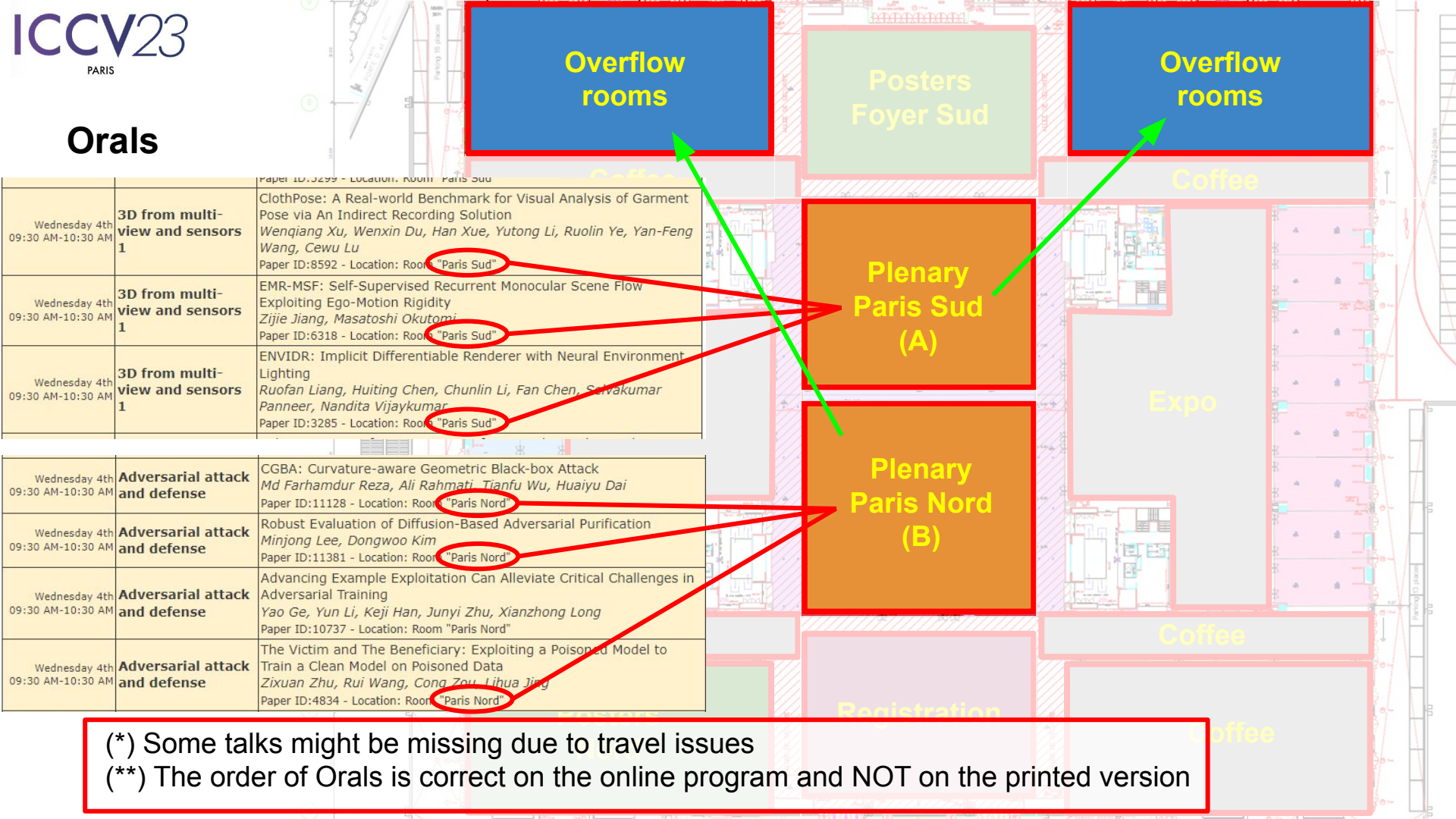

(*) Some talks might be missing due to travel issues
(**) The order of Orals is correct on the online program and NOT on the printed version

Oral sessions overflow rooms

- Don’t sit on the floor or block exits
- The opening session (and keynotes) will in Paris North, and streamed in Paris South + all south rooms
- For the rest of the sessions:
  - All the sessions in Paris North will be streamed in rooms South 1-2-3
  - All the sessions in Paris South will be streamed in rooms South 4-5-6

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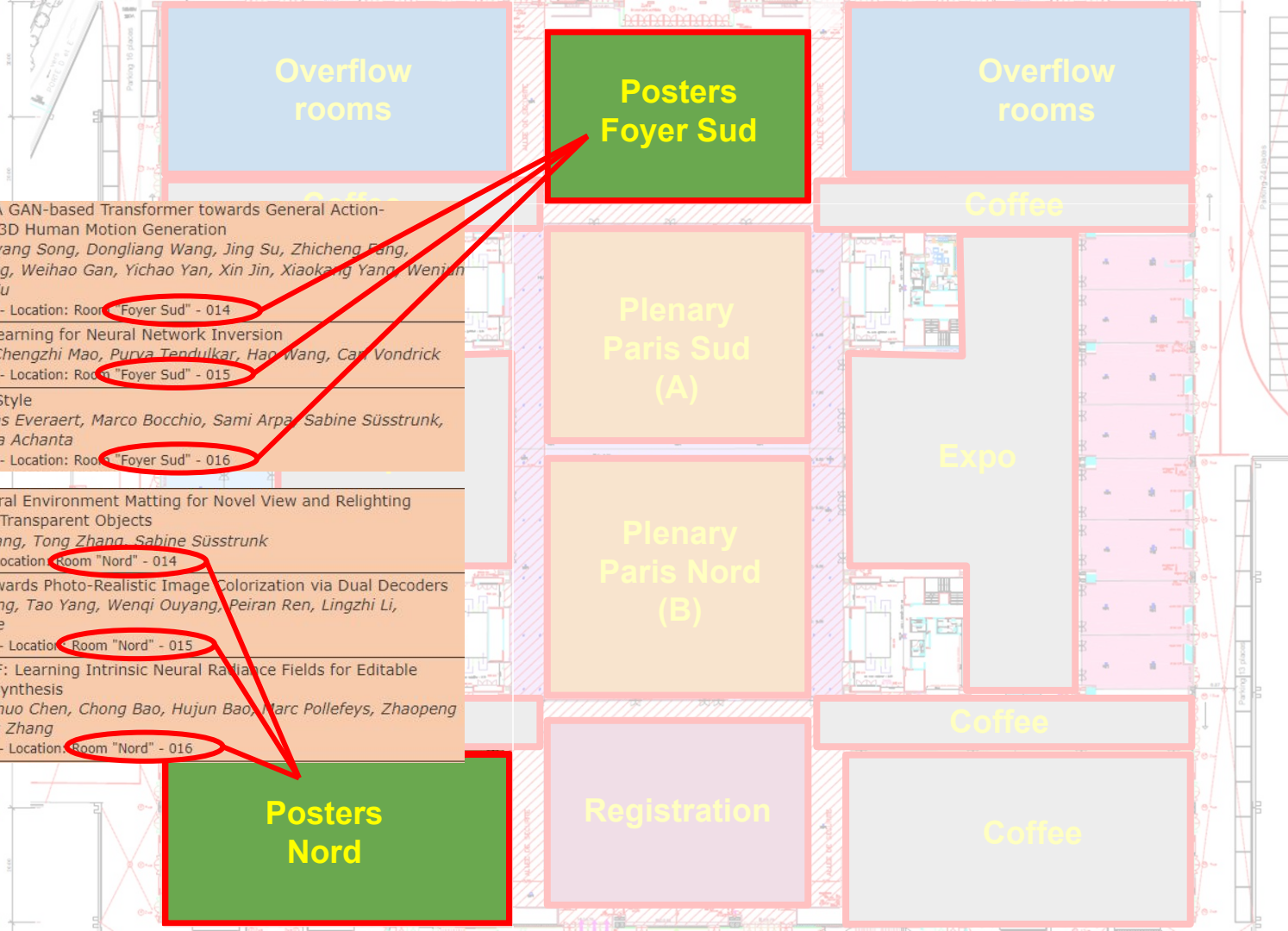
Posters

Wednesday 4th 10:30 AM-12:30 PM	**Neural generative models**	ActFormer: A GAN-based Transformer towards General Action-Conditioned 3D Human Motion Generation *Liang Xu, Ziyang Song, Dongliang Wang, Jing Su, Zhicheng Fang, Chenjing Ding, Weihao Gan, Yichao Yan, Xin Jin, Xiaokang Yang, Wenjun Zeng, Wei Wu* Paper ID:5879 - Location: Room "Foyer Sud" - 014
Wednesday 4th 10:30 AM-12:30 PM	**Neural generative models**	Landscape Learning for Neural Network Inversion *Ruoshi Liu, Chengzhi Mao, Purva Tendulkar, Hao Wang, Carl Vondrick* Paper ID:5343 - Location: Room "Foyer Sud" - 015
Wednesday 4th 10:30 AM-12:30 PM	**Neural generative models**	Diffusion in Style *Martin Nicolas Everaert, Marco Bocchio, Sami Arpa, Sabine Süsstrunk, Radhakrishna Achanta* Paper ID:6203 - Location: Room "Foyer Sud" - 016
Wednesday 4th 10:30 AM-12:30 PM	**Vision and graphics**	NEMTO: Neural Environment Matting for Novel View and Relighting Synthesis of Transparent Objects *Dongqing Wang, Tong Zhang, Sabine Süsstrunk* Paper ID:32 - Location: Room "Nord" - 014
Wednesday 4th 10:30 AM-12:30 PM	**Vision and graphics**	DDColor: Towards Photo-Realistic Image Colorization via Dual Decoders *Xiaoyang Kang, Tao Yang, Wenqi Ouyang, Peiran Ren, Lingzhi Li, Xuansong Xie* Paper ID:5975 - Location: Room "Nord" - 015
Wednesday 4th 10:30 AM-12:30 PM	**Vision and graphics**	IntrinsicNeRF: Learning Intrinsic Neural Radiance Fields for Editable Novel View Synthesis *Weicai Ye, Shuo Chen, Chong Bao, Hujun Bao, Marc Pollefeys, Zhaopeng Cui, Guofeng Zhang* Paper ID:7107 - Location: Room "Nord" - 016



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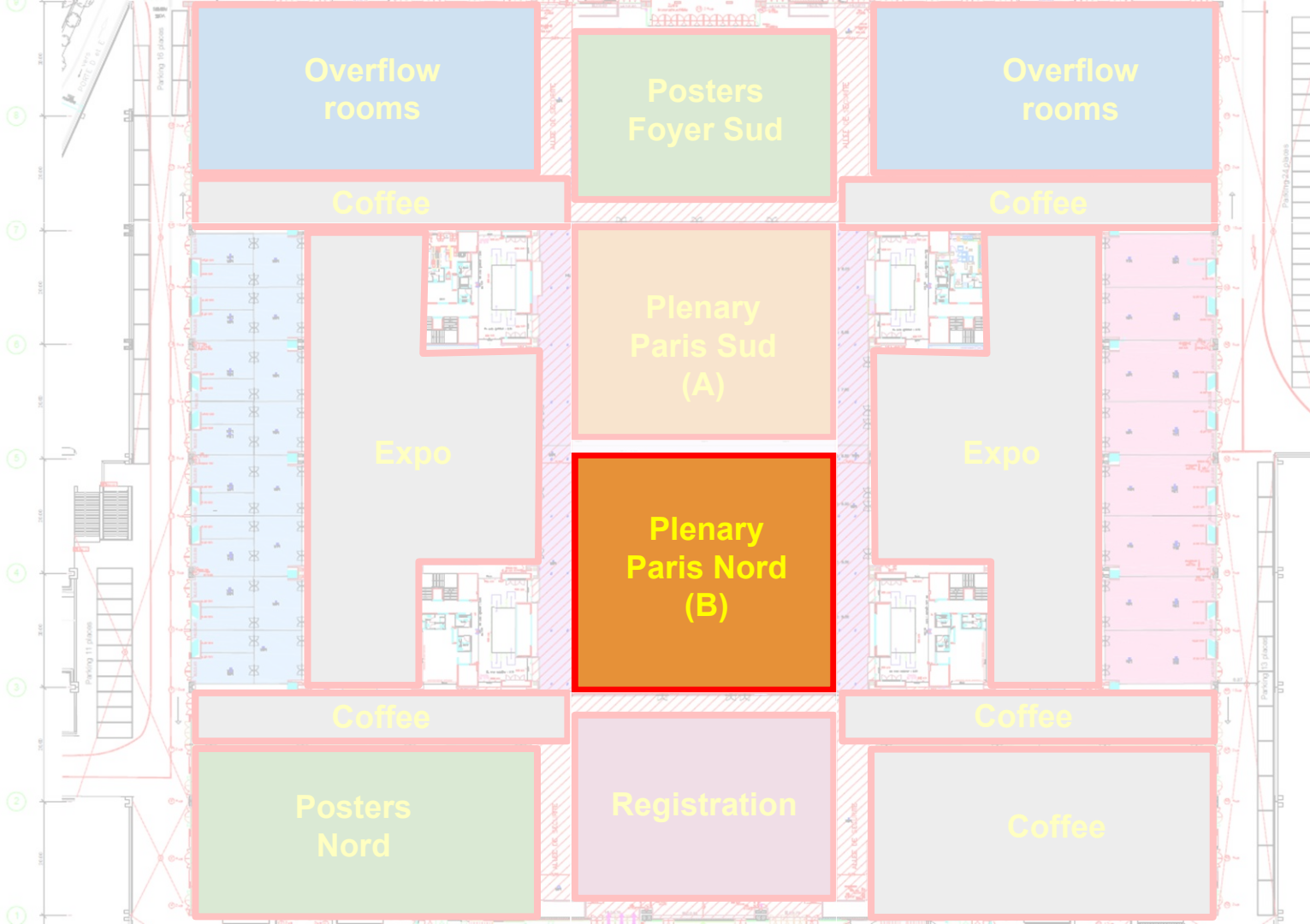
PAMI TC Meeting
Thrs Oct 5
18.00-19.00



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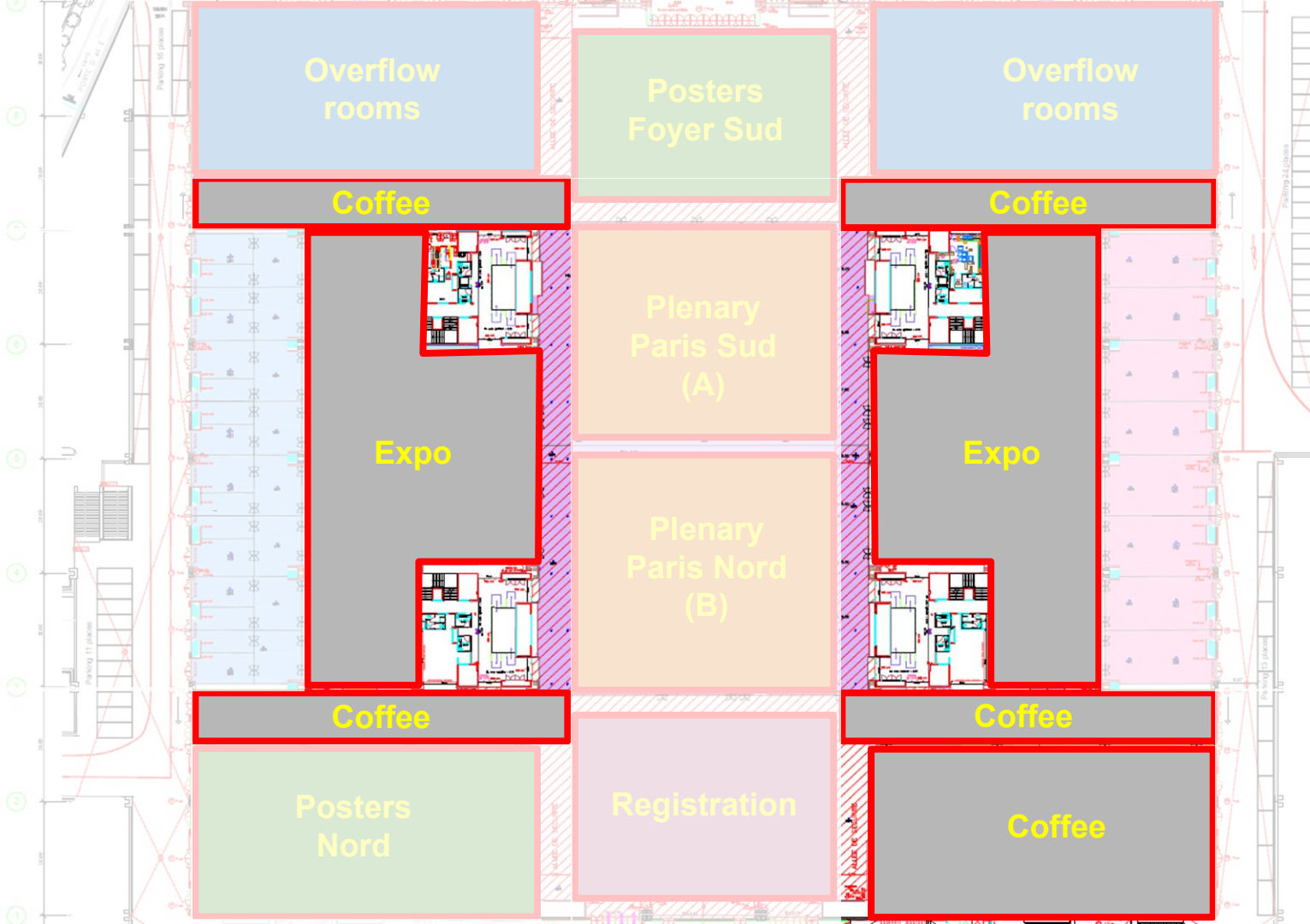
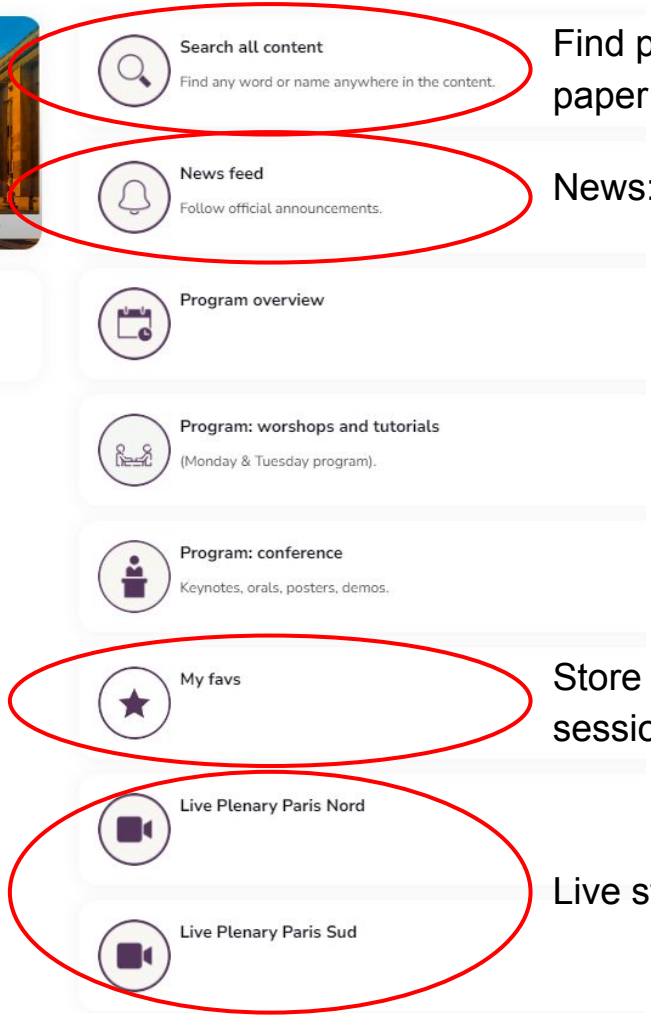
Reception
Wed Oct 4
18:30-20:00





Find papers by titles and paper IDs

News: stay tuned!

Store interesting papers and sessions

Live stream of oral sessions

Access

https://iccv2023.thecvf.com/Live

Use your ICCV registration email

Go

Search all content

News feed

Program overview

Program: worshops and tutorials

Program: conference

My favs

Multi-Modal Neural Radiance Field for Monocular Dense SLAM with a Light-Weight ToF Sensor

Abstract

Light-weight time-of-flight (ToF) depth sensors are compact and cost-efficient, and thus widely used on mobile devices for tasks such as autofocus and obstacle detection. However, due to the sparse and noisy depth measurements, these sensors have rarely been considered for dense geometry reconstruction. In this work, we present the first dense SLAM system with a monocular camera and a light-weight ToF sensor. Specifically, we propose a multi-modal implicit scene representation that supports rendering both the signals from the RGB camera and light-weight ToF sensor which drives the optimization by comparing with the raw sensor inputs. Moreover, in order to guarantee successful pose tracking and reconstruction, we exploit a predicted depth as an intermediate supervision and develop a coarse-to-fine optimization strategy for efficient learning of the implicit representation. At last, the temporal information is explicitly exploited to deal with the noisy signals from light-weight ToF sensors to improve the accuracy and robustness of the system. Experiments demonstrate that our system well exploits the signals of light-weight ToF sensors and achieves competitive results both on camera tracking and dense scene reconstruction. Project page: https://zju3dv.github.io/tof_slam/.

Information

Session
Orals WED-AM 1A - 3D from multi-view and sensors

Authors
Xinyang Liu, Yijin Li, Yanbin Teng, Hujun Bao, Guofeng Zhang, Yinda Zhang, Zhaopeng Cui

Contribution ID
5824

Room
Plenary Room "Paris Sud"

ICCV23 Open Access
www.openaccess.thecvf.com/...

Ask the speaker about...
3D from multi-view and sensors > Multi-Modal...

Ask questions to authors off-line and during oral presentations

ICCV 2023 Best Paper Awards

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Paper Awards Committee

ICCV23
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- Dima Damen – University of Bristol (chair)
- Angela Dai - Technical University of Munich
- Steve Lin – Microsoft Research Asia
- Chen Change Loy - Nanyang Technological University
- Dimitris Samaras - Stony Brook
- Yoichi Sato - University of Tokyo
- Gül Varol - École des Ponts ParisTech
- Lihi Zelnik-manor - Technion

Process

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17 papers (2 area chair recommendations)

Reviewing papers, reviews, meta-reviews & author response

3 triplets – top 3 paper selection w/ justification

7 papers reviewed by all committee members

Meeting for decision w/ student paper info

Initial list (from PCs)

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1. Adding Conditional Control to Text-to-Image Diffusion Models – Zhang et al.
2. Advancing Example Exploitation Can Alleviate Critical Challenges in Adversarial Training – Ge et al.
3. DiffusionDet: Diffusion Model for Object Detection – Chen et al.
4. ITI-GEN: Inclusive Text-to-Image Generation – Zhang et al.
5. Passive Ultra-Wideband Single-Photon Imaging – Wei et al.
6. Ref-NeuS: Ambiguity-Reduced Neural Implicit Surface Learning for Multi-View Reconstruction with Reflection – Ge et al.
7. Scale-MAE: A Scale-Aware Masked Autoencoder for Multiscale Geospatial Representation Learning – Reed et al.
8. Segment Anything - Kirillov et al.
9. Shape Analysis of Euclidean Curves under Frenet-Serret Framework – Chassat et al.
10. The Victim and The Beneficiary: Exploiting a Poisoned Model to Train a Clean Model on Poisoned Data – Zhu et al.
11. Tracking Everything Everywhere All at Once – Wang et al.
12. Tri-MipRF: Tri-Mip Representation for Efficient Anti-Aliasing Neural Radiance Fields – Hu et al.
13. UniDexGrasp++: Improving Universal Dexterous Grasping via Geometry-aware Curriculum Learning and Iterative Generalist-Specialist Learning – Wan et al.
14. Viewing Graph Solvability in Practice - Arrigoni et al.
15. VQ3D: Learning a 3D-Aware Generative Model on ImageNet – Sarget et al.
16. When Noisy Labels Meet Long Tail Dilemmas: A Representation Calibration Method – Zhang et al.
17. Zip-NeRF: Anti-Aliased Grid-Based Neural Radiance Fields – Barron et al.

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Best Student Paper

Best Student Paper

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Tracking Everything Everywhere All At Once

Qianqian Wang[1,2] Yen-Yu Chang[1] Ruojin Cai[1] Zhengqi Li[2]
Bharath Hariharan[1] Aleksander Holynski[2,3] Noah Snavely[1,2]

[1]Cornell University [2]Google Research [3]UC Berkeley

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Best Paper Honorable Mention

Best Paper Honorable Mention

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Segment Anything

Alexander Kirillov Eric Mintun Nikhila Ravi Hanzi Mao Tete Xiao
Spencer Whitehead Alexander C. Berg Wan-Yen Lo Chloe Rolland
Laura Gustafson Piotr Dollar Ross Girshick

Meta AI Research, FAIR




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Best Paper (Marr Prize)

ICCV23
PARIS

Best Paper (Marr Prize)

Joint Award – 2 papers

Best Paper (Marr Prize)

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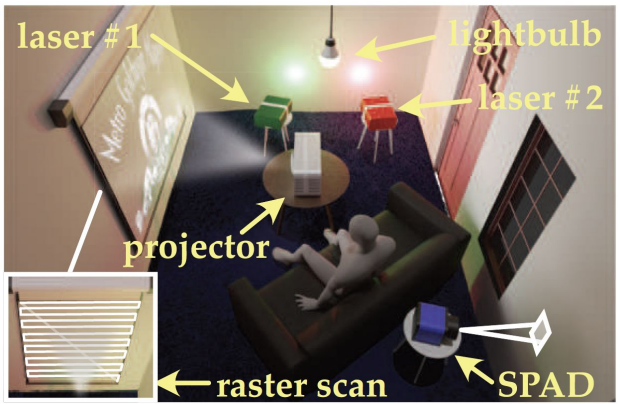
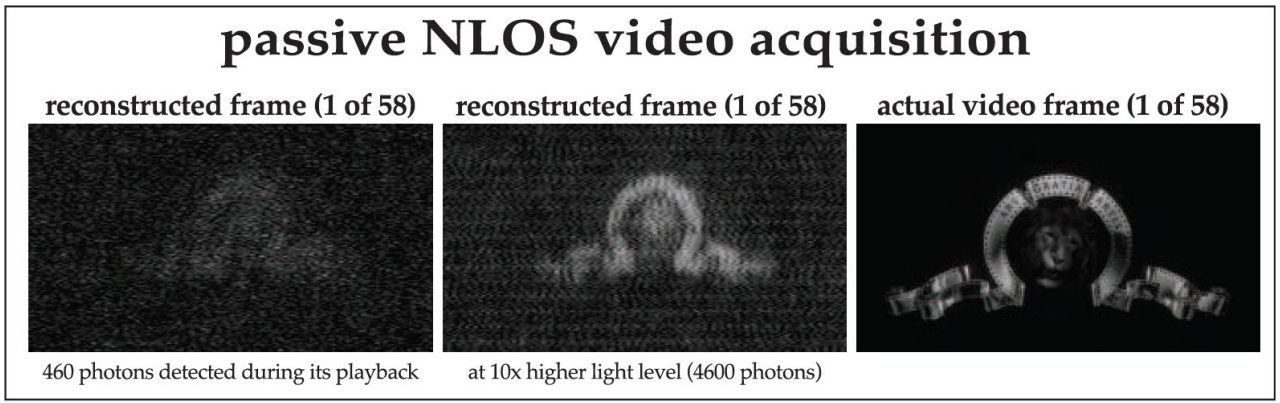
Passive Ultra-Wideband Single-Photon Imaging

Mian Wei Sotiris Nousias Rahul Gulve
David B. Lindell Kiriakos N. Kutulakos

University of Toronto





Best Paper (Marr Prize)

ICCV23
PARIS

Adding Conditional Control to Text-to-Image Diffusion Models

Lvmin Zhang Anyi Rao Maneesh Agrawala
Stanford University

Input human pose Default "chef in kitchen" "Lincoln statue"

PAMITC awards

- Each award is chaired by a member of the PAMITC awards committee
- Nominations are solicited from the community in the PAMITC newsletter
- Conflict of interest policies are in place

PAMITC awards at ICCV

- Helmholtz prize: a paper from ICCV 10 years ago that has withstood the test of time

- Mark Everingham prize: for furthering progress in the Computer Vision community

- Distinguished researcher award: researchers whose contributions have significantly contributed to the progress of Computer Vision.

- Azriel Rosenfeld Lifetime Achievement award: a researcher who has made significa contributions to the field of Computer Vision over longtime careers

Helmholtz prize

Action recognition with improved trajectories

Heng Wang, Cordelia Schmid

Award committee:
Rama Chellappa
Jitendra Malik (chair)
Gerard Medioni

PAMI Everingham Prize Winner 2023

The Ceres Solver open source non-linear optimization software library

Award committee:
Dima Damen
David Forsyth
Angjoo Kanazawa
Jitendra Malik
Josef Sivic,
Luc van Gool
John Winn,
Andrew Zisserman, Chair

Sameer Agarwal, Keir Mierle and collaborators

for outstanding software that has empowered so many algorithms in the vision community and beyond, including COLMAP, Blender, OpenMVG and Panorama mobile apps.

PAMI Everingham Prize Winner 2023

The Common Objects in Context (COCO) dataset

Tsung-Yi Lin, Genevieve Patterson, Matteo R. Ronchi, Yin Cui, Michael Maire,
Serge Belongie, Lubomir Bourdev, Ross Girshick, James Hays, Pietro Perona,
Deva Ramanan, Larry Zitnick, Piotr Dollár

for a dataset that has enabled a wide range of computer vision tasks including object instance segmentation and image captioning.

PAMI Distinguished Researcher Award

Award committee:
Andrew Blake
Luc van Gool
Bill Freeman
Richard Hartley, Chair
Jitendra Malik
Shree Nayar
Pietro Perona
Cordelia Schmid
Rick Szeliski
Demetri Terzopoulos
Andrew Zisserman

Michael Black
(MPI)

Rama Chellappa
(JHU)

PAMI Azriel Rosenfeld Lifetime Achievement Award

Award committee:
Ruzena Bajcsy
Olivier Faugeras
Takeo Kanade, Chair
Jan Koenderink
Tomaso Poggio
Shimon Ullman

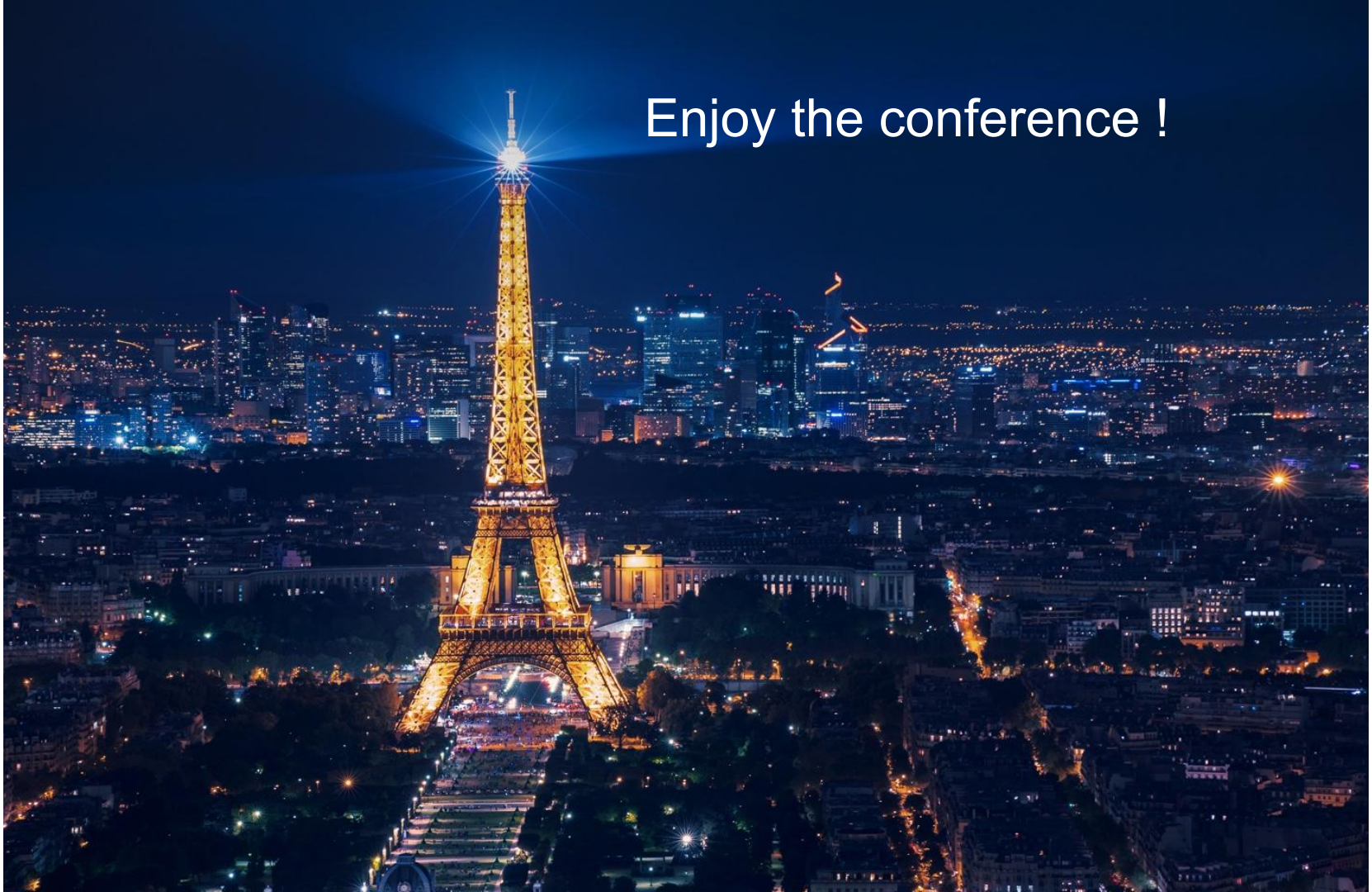
Ted Adelson
(MIT)

Some closing words on `enjoy the conference’

Learn new things ..

Meet new people …

Don’t get Covid


Enjoy the conference !