SCIA 2025

23th Scandinavian Conference on Image Analysis

June 22–25, 2025

Reykjavík, Iceland

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Lecture Notes in Computer Science

Springer

DTU

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BREAKING NEW GROUND

AALBORG UNIVERSITY

UNIVERSITATIS ISLANDIAE SIGILLVM

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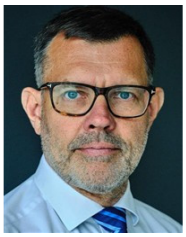
Organization

General chairs



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Aalborg University (AAU), Denmark

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University of Copenhagen (KU), and Pioneer Centre for AI, Denmark

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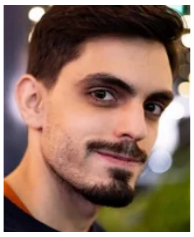


Pablo Delgado-Rodriguez
Technical University of Denmark (DTU), Denmark

About

SCIA

Welcome to the Scandinavian Conference on Image Analysis (SCIA) 2025. The main conference will be held from June 23rd to June 25th, 2025, at the University of Iceland campus, in Reykjavík, Iceland.

Areas of Focus

3D vision from multiview and other sensors · Action and behavior recognition · Biometrics, faces, body gestures and pose · Computational photography · Datasets and evaluation · Detection, recognition, classification, and localization in 2D and/or 3D · Explainable AI for CV · Image and video processing, analysis, and understanding · Low·level and physics·based vision · Machine learning and deep learning · Medical, biological, and cell microscopy · Motion and tracking · Scene, text and document analysis and understanding · Segmentation, grouping, and shape · Vision + language (+ other modalities) · Vision applications and systems · Vision for robotics and autonomous vehicles

Why Attend SCIA 2025

The conference program will feature top invited speakers and high-quality scientific presentations, all set against the unique geological and cultural backdrop of Iceland.

- Regional Collaboration Opportunities: Engage with peers and leaders from across the Nordics, fostering sustainable and climate-friendly collaborations and exchanges. Insightful and Broad Exposure: Learn from top experts about cutting-edge research in image analysis and its applications in healthcare, environmental monitoring, and automation, broadening your perspective.

- Revamped Presentation Format: Alongside the classical SCIA submission format, for the first time, SCIA 2025 offers authors the unique opportunity to present their

recently published works. This new session format enhances knowledge sharing and provides further visibility to cutting-edge research in image analysis.

- Best Nordic Thesis Prize: The biennial prize will be awarded to the best Nordic thesis, recognizing and promoting outstanding research by young scientists. Inspirational Environment: Enjoy the stunning landscapes and vibrant culture of Iceland, which provide a perfect backdrop for inspiration and discovery.

Timetable

IT: Invited Talk, KT: Keynote Talk, OS: Oral Session, PS: Posters, ST: Speed Talks.

Sunday, 22 of June

12:00–17:00	**QIM Workshop**
17:00–19:00	
19:00–21:00	**Welcome Reception**

Monday, 23 of June

9:00–9:15	**Conference Opening**		
9:15–10:00	KT	**Pascal Fua** EPFL	Deep Shape Design
10:00–10:30	**Break**		
10:30–11:30	OS	**Oral Session A**	2D/3D Perception & Expl. AI
11:30–12:00	IT		
12:00–13:00	**Lunch**		
13:00–14:00	OS	**Oral Session B**	Vision for Robotics & Applications
14:00–14:30	ST	**Speed talks**	Posters 1 & 2
14.30–15:00	**Break**		
15:00–16:00	PS	**Poster Session 1**	
16:00–16:30	**Break**		
16:30–17:30	PS	**Poster Session 2**	

Tuesday, 24 of June

9:00 – 9:45	KT	**Dima Damen** University of Bristol & Google DeepMind	Opportunities in Egocentric Video Understanding
9:45–10:00	ST	**Speed talks**	Posters 3
10:00-10:30	**Break**		
10:30–11:30	PS	**Poster Session 3**	
11:30–12:00	**Break**		
12:00–21:00	**Excursion and Conference Dinner (outside of Reykjavík)**		

Wednesday 25 of June

9:00–10:00	OS	**Oral Session C**	Mach. Learning & Deep Learning
10:00–10:30	**Break**		
10:30–11:30	OS	**Oral Session D**	Medical Imaging & datasets
11:30–12:00	ST	**Speed talks & Closing Remarks**	Posters 4 & 5
12:00–13:00	**Lunch**		
13:00–14:00	PS	**Poster Session 4**	
14:00–14:30	**Break**		
14:30–15:30	PS	**Poster Session 5**	

Keynote Talks

Deep Shape Design

Pascal Fua

École Polytechnique Fédérale de Lausanne (EPFL)

We live in a world full of manufactured objects of ever-increasing complexity that require clever engineering to be functional. Today, individual parts that composite objects are made of are optimized separately, control is not fully accounted for at design time, and much manual tinkering is required. As a result, our machines are not as efficient as they could be. We aim to change this by developing end-to-end trainable pipelines that incorporate all these elements. In this talk I will present the approach to composite design and co-design for shape and control we are currently developing.

Opportunities in Egocentric Video Understanding

Dima Damen

University of Bristol
Google DeepMind

Footage from wearable cameras offer unique opportunities in multi-modal learning (audio, camera motion, gaze) and present significant challenges to standard computer vision tasks. The talk will introduce common datasets, research questions and progress to date. Particular emphasis will be given to the new trend of operating 'out of the frame' where information is preserved in the world coordinate frame including head motion, interactions and object permanence. The newly introduced dataset HD-EPIC, CVPR 2025, will also be presented.

Invited Talks

Icelandic Volcanoes and How to Monitor Them

Gro Birkefeldt Moller Pedersen

Research specialist at the Icelandic Meteorological Office

This talk provides an overview of Iceland's unique geological setting, with particular focus on recent volcanic activity on the Reykjanes Peninsula. It highlights the use of various remote sensing data to provide real-time monitoring and hazard assessment of lava eruptions.

Oral Sessions

Oral Session A - 2D/3D Perception & Explainable AI

Monday, 23 of June. 10:30–11:30.

ID10	*The Impact of Semi-Supervised Learning on Line Segment Detection*
	Johanna Engman (Lund University), Kalle Åström (Lund University), Magnus Oskarsson (Lund University)
ID61	*Revisiting Likelihood-Based Out-of-Distribution Detection by Modeling Representations*
	Yifan Ding (Linkoping University), Arturas Aleksandrauskas (Linkoping University), Amirhossein Ahmadian (Linkoping University), Jonas Unger (Linkoping University), Fredrik Lindsten (Linkoping University), Gabriel Eilertsen (Linkoping University)
ID9	*A Meaningful Perturbation Metric for Evaluating Explainability Methods*
	Danielle Cohen (Tel Aviv University), Hila Chefer (Tel Aviv University), Lior Wolf (Tel Aviv University)

Oral Session B - Vision for Robotics & Applications

Monday, 23 of June. 13:00–14:00.

ID7	*Efficient Real-time Quadcopter Propeller Detection and Attribute Estimation with High-resolution Event Camera*
	Radim Spetlik (Visual Recognition Group), Tereza Uhrová (CTU), Jiří Matas (CTU)
ID87	*Road Grip Uncertainty Estimation Through Surface State Segmentation*
	Jyri Maanpää (Finnish Geospatial Research Institute FGI, National Land Survey of Finland), Julius Pesonen (Finnish Geospatial Research Institute FGI, National Land Survey of Finland), Iaroslav Melekhov (Department of Computer Science, Aalto University), Heikki Hyyti (Finnish Geospatial Research Institute FGI, National Land Survey of Finland), Juha Hyyppä (Finnish Geospatial Research Institute FGI, National Land Survey of Finland)
ID38	*Contour Detection in Glass Fiber Layups with Geometric Prior*
	Jonathan Bøss (University of Southern Denmark), Jakob Wilm (University of Southern Denmark)

Oral Session C - Machine Learning and Deep Learning

Wednesday, 25 of June. 9:00-10:00.

ID8	*Addressing degeneracies in latent interpolation for diffusion models*
	Erik Landolsi (Chalmers University of Technology), Fredrik Kahl (Chalmers University of Technology).
ID18	*PHASE: Physiological Dynamics-Based Attention for SpO2 Estimation*
	Shahzad Ahmad (Østfold University College), Surajit Mukherjee (Indian Statistical Institute), Sukalpa Chanda (Østfold University College), Shivakumara Palaiahnakote (University of Salford), Umapada Pal (Indian Statistical Institute), Marius Pedersen (NTNU Gjøvik).
ID71	*Efficient Object-Centric Learning for Videos*
	Rickard Maus (KTH Royal Institute of Technology), Atsuto Maki (KTH Royal Institute of Technology).

Oral Session D - Medical Imaging & Datasets

Wednesday, 25 of June. 10:30-11:30.

ID44	*Automated Cardiac Adipose Tissue Segmentation in Computed Tomography: A Literature Review*
	Andreas Aspe (DTU), Jonas Pedersen (Copenhagen University Hospital), Andreas Johansen (Copenhagen University Hospital), Klaus Kofoed (Copenhagen University Hospital), Kristine Sørensen (DTU), Rasmus Paulsen (DTU), Josefine Sundgaard (DTU).
ID51	*Comparative Analysis of rPPG and Motion-Based Approaches for Heart and Respiration Rate Estimation from Videos*
	Nhi Nguyen (CMVS, University of Oulu), Constantino Álvarez Casado (CMVS, University of Oulu), Le Nguyen (CMVS, University of Oulu), Manuel Lage Cañellas (CMVS, University of Oulu), Miguel Bordallo López (CMVS, University of Oulu).
ID62	*Aligning Subjective and Objective Assessments in Super-Resolution Models*
	Muhammad Hamza Zafar (NTNU Norwegian University of Science and Technology), Jon Yngve Hardeberg (NTNU Norwegian University of Science and Technology).

Poster Sessions

Poster session 1

Monday, 23 of June. 15:00-16:00.

ID4	*From Web Data to Real Fields: Low-Cost Unsupervised Domain Adaptation for Agricultural Robots*
	Vasileios Tzouras (Technical University of Denmark), Lazaros Nalpantidis (Technical University of Denmark), Ronja Güldenring (Technical University of Denmark).
ID15	*Weak Cube R-CNN: Weakly Supervised 3D Detection using only 2D Bounding Boxes*
	Andreas Lau Hansen (DTU), Lukas Wanzeck (DTU), Dimitrios Papadopoulos (DTU).
ID25	*Centered Self-Attention Layers*
	Ameen Ali (Tel Aviv University), Tomer Galanti (Texas A&M University), Lior Wolf (Tel Avuv University).
ID30	*Towards an AI-Powered Video Assistant Referee System (VARS) for Association Football*
	Jan Held (University of Liege), Anthony Cioppa (University of Liege), Silvio Giancola (Kaust), Abdullah Hamdi (University of Oxford), Christel Devue (University of Liege), Bernard Ghanem (Kaust), Marc Van Droogenbroeck (University of Liege).
ID39	*FACT: Multinomial Misalignment Classification for Point Cloud Registration*
	Ludvig Dillén (Lund University), Per-Erik Forssén (Linköping University), Johan Edstedt (Linköping University).
ID53	*Training Binary Neural Networks with Deep Semantic Guidance*
	Jiehua Zhang (University of Oulu), Zhuo Su (University of Oulu), Li Liu (National University of Defense Technology).
ID59	*Compressing 3D Gaussian Splatting by Noise-Substituted Vector Quantization*
	Haishan Wang (Aalto University), Mohammad Vali (Aalto University), Arno Solin (Aalto University).

ID67	*Data Augmentation-Based Unsupervised Domain Adaptation In Medical Imaging*
	Sebastian Nørgaard Llambias (University of Copenhagen), Mads Nielsen (University of Copenhagen), Mostafa mehdipour ghazi (University of Copenhagen).
ID78	*Food State Recognition from Recipes Using Multimodal Model for Task Monitoring in Autonomous Cooking Robots*
	Rina Tagami (Chukyo University), Hiroki Kobayashi (Chukyo University), Shuichi Akizuki (Chukyo University), Manabu Hashimoto (Chukyo University).
ID89	*CSI2Depth: Spatio-Temporal Depth Images from Wi-Fi CSI Data via Transformer Networks and conditional Generative Adversarial Networks*
	Constantino Álvarez Casado (University of Oulu), Manuel Lage Cañellas (University of Oulu), Janne Mustaniemi (University of Oulu), Matteo Pedone (University of Oulu), Olli Silvén (University of Oulu), Miguel Bordallo López (University of Oulu).
ID102	*Fine-Grained Classification of Unpigmented Skin Cancer from Paired Dermatoscopy Images*
	Anna Gummeson (Lund University), Gabrielle Flood (Lund University), Kari Nielsen (Region Skåne), Åsa Ingvar (Region Skåne), Fredrik Johansson (Region Skåne), Carolina Nätterdahl (Region Skåne), Ida Arvidsson (Lund University).
ID108	*A Remote Gesture-Based Machine Vision System for Infection-Free Medical Interaction*
	Van Doi Truong (Department of Mechanical Design Engineering, Hanyang University), Hyun-Kyo Lim (Department of Mechanical Design Engineering, Hanyang University), Seongje Kim (Department of Mechanical Design Engineering, Hanyang University), Trong Khanh Dat Than (Faculty of Mechanical Engineering, Ho Chi Minh City University of Technology), Jonghun Yoon (Department of Mechanical Engineering, Hanyang University). Abstract submission.
ID114	*Exploring text-to-image generation for historical document image retrieval*
	Melissa Cote (University of Victoria), Alexandra Branzan Albu (University of Victoria). Abstract submission.
ID119	*Deep Learning-Enhanced Whole Heart Light Sheet Microscopy Reveals Semaglutide Efficacy on Cardiac Fibrosis*
	Sheyla Barrado Ballestero (Gubra), Sarah Yttergren (Gubra), Max Hahn (Gubra), Marie Rosenkilde (Gubra), Casper Salinas (Gubra), Urmas Roostalu (Gubra). Abstract submission.
ID124	*SupeRF: Neural Fields for Multi-Image Super-Resolution*
	Sander Riisøen Jyhne (University of Agder), Serge Belongie (University of Copenhagen), Nico Lang (University of Copenhagen). Abstract submission.

ID10	*The Impact of Semi-Supervised Learning on Line Segment Detection*
	Johanna Engman (Lund University), Kalle Åström (Lund University), Magnus Oskarsson (Lund University).
ID61	*Revisiting Likelihood-Based Out-of-Distribution Detection by Modeling Representations*
	Yifan Ding (Linkoping University), Arturas Aleksandrauskas (Linkoping University), Amirhossein Ahmadian (Linkoping University), Jonas Unger (Linkoping University), Fredrik Lindsten (Linkoping University), Gabriel Eilertsen (Linkoping University).
ID9	*A Meaningful Perturbation Metric for Evaluating Explainability Methods*
	Danielle Cohen (Tel Aviv University), Hila Chefer (Tel Aviv University), Lior Wolf (Tel Aviv University).

Poster session 2

Monday, 23 of June. 16:30-17:30.

ID5	*FGGP: Fixed-Rate Gradient-First Gradual Pruning*
	Lingkai Zhu (Uppsala University), Can Deniz Bezek (Uppsala University), Orcun Goksel (Uppsala University).
ID16	*POEM: Precise Object-level Editing via MLLM control*
	Marco Schouten (DTU), Mehmet Onurcan Kaya (DTU), Serge Belongie (University of Copenhagen), Dim P Papadopoulos (DTU).
ID31	*FIORD: A Fisheye Indoor-Outdoor Dataset with LIDAR Ground Truth for 3D Scene Reconstruction and Benchmarking*
	Ulas Gunes (Tampere University), Matias Turkulainen (Aalto University), Xuqian Ren (Tampere University), Arno Solin (Aalto University), Juho Kannala (Aalto University), Esa Rahtu (Tampere University).

ID40	*Statistical analysis of left ventricular remodeling following a myocardial infarct*
	Cathrine Underbjerg Hansen (Technical University of Denmark), Mathias Micheelsen Lowes (Technical University of Denmark), Andreas Ohrt Johansen (Copenhagen University Hospital Rigshospitalet), Klaus Kofoed (Copenhagen University Hospital Rigshospitalet), Tobias Kühl Jørgen (Copenhagen University Hospital Rigshospitalet), Allan Aasbjerg Nielsen (Technical University of Denmark), Rasmus Paulsen (Technical University of Denmark), Josefine Vilsbøll Sundgaard (Novo Nordisk A/S, Technical University of Denmark), Kristine Aavild Sørensen (Novo Nordisk A/S, Technical University of Denmark).
ID54	*Deep Spatio-Temporal Neural Network for Air Quality Reanalysis*
	Ammar Kheder (LUT University), Benjamin Foreback (Univeristy of Helsinki), Lili Wang (Institute of Atmospheric Physics, Chinese Academy of Sciences), Zhi-Song Liu (LUT University), Michael Boy (Univeristy of Helsinki).
ID60	*FAST-AID Brain: Fast and Accurate Segmentation Tool Using Artificial Intelligence Developed for Brain*
	Mostafa mehdipour ghazi (University of Copenhagen), Mads Nielsen (University of Copenhagen).
ID73	*EfficientPose 6D: Scalable and Efficient 6D Object Pose Estimation*
	Zixuan Fang (TU Darmstadt), Thomas Pöllabauer (TU Darmstadt), Tristan Wirth (TU Darmstadt), Sarah Berkei (Threedy GmbH), Volker Knauthe (TU Darmstadt), Arjan Kuijper (TU Darmstadt,Fraunhofer IGD).
ID79	*Subspace-Based Embedded Feature Reduction for Fast Anomaly Detection*
	Naoki Murakami (Chukyo University), Naoto Hiramatsu (Chukyo University), Hiroki Kobayashi (Chukyo University), Shuichi Akizuki (Chukyo University), Manabu Hashimoto (Chukyo University).
ID91	*Spherical Harmonics Grid for Fast Ultrasound 3D Reconstruction*
	Kamil Mikolaj (Technical University of Denmark), Anders Nymark Christensen (Technical University of Denmark).
ID98	*Adversarially Informed Neural Fields for Computed Tomography Reconstruction*
	Rasmus Pedersen (DTU), Vedrana Dahl (DTU), Anders Dahl (DTU), Jens Andreasen (DTU), Jakob Jørgensen (DTU), Luke Besley (DTU).
ID103	*The Weighting Game: Evaluating Quality of Explainability Methods*
	Lassi Raatikainen (Tampere University), Esa Rahtu (Tampere University).

ID110	*Open-Vocabulary 3D Object Detection in Autonomous Driving via LiDAR-Language Alignment*
	Lei Li (University of Copenhagen), Jenq-Neng Hwang (University of Washington), Serge Belongie (University of Copenhagen). Abstract submission.
ID115	*Soil quality classification using machine and deep learning on geospatial crop data in Norway*
	Rashmi Gupta (Kristiania University of Applied Sciences). Abstract submission.
ID120	*Retinal Age Gap as a Biomarker; Assessing the Validity in the Tromsø Study*
	Magnus Størdal (UiT), Benjamin Ricaud (UiT), Michael Kampffmeyer (UiT), Maja Erke (UiT), Geir Bertelsen (UiT). Abstract submission.
ID125	*Building Multimodal Resources for Low-Resource Languages: Insights from the Scandinavian Languages*
	Vésteinn Snæbjarnarson (University of Copenhagen), Wenyan Li (University of Copenhagen), Serge Belongie (University of Copenhagen). Abstract submission.
ID7	*Efficient Real-time Quadcopter Propeller Detection and Attribute Estimation with High-resolution Event Camera*
	Radim Spetlik (Visual Recognition Group), Tereza Uhrová (CTU), Jiří Matas (CTU).
ID87	*Road Grip Uncertainty Estimation Through Surface State Segmentation*
	Jyri Maanpää (Finnish Geospatial Research Institute FGI, National Land Survey of Finland), Julius Pesonen (Finnish Geospatial Research Institute FGI, National Land Survey of Finland), Iaroslav Melekhov (Department of Computer Science, Aalto University), Heikki Hyyti (Finnish Geospatial Research Institute FGI, National Land Survey of Finland), Juha Hyyppä (Finnish Geospatial Research Institute FGI, National Land Survey of Finland).
ID38	*Contour Detection in Glass Fiber Layups with Geometric Prior*
	Jonathan Bøss (University of Southern Denmark), Jakob Wilm (University of Southern Denmark).

Poster session 3

Tuesday, 24 of June. 10:30-11:30.

ID6	*Progressive Feature Learning for Realistic Cloth-Changing Gait Recognition*
	Xuqian Ren (Tampere University), Juho Kannala (Aalto University), Esa Rahtu (Tampere University).
ID20	*Non-stationary signal analysis: detrending and anomaly detection*
	Vojtěch Drahý (Czech technical university in Prague, Lappeenranta-Lahti University of Technology LUT), Radek Mařík (Czech technical university in Prague), Heikki Kälviäinen (Lappeenranta-Lahti University of Technology LUT, Brno University of Technology).
ID32	*Anna Bøgevang Ekner (Technical University of Denmark), Mathias Micheelsen Lowes (Technical University of Denmark), Rasmus Reinhold Paulsen (Technical University of Denmark), Klaus Fuglsang Kofoed (Copenhagen University Hospital Rigshospitalet), Andreas Ohrt Johansen (Copenhagen University Hospital Rigshospitalet), Kristine Aavild Sørensen (Novo Nordisk A/S, Technical University of Denmark), Josefine Vilsbøll Sundgaard (Novo Nordisk A/S, Technical University of Denmark).*
	Authors and affiliations
ID47	*Determining Fetal Orientations From Blind Sweep Ultrasound Video*
	Jakub Maciej Wiśniewski (Technical University of Denmark), Anders Christensen (Technical University of Denmark), Mary Ngo (CAMES RH), Martin Tolsgaard (CAMES RH), Chun Kit Wong (Technical University of Denmark).
ID55	*Is Adversarial Training with Compressed Datasets Effective?*
	Tong Chen (University of Copenhagen), Raghavendra Selvan (University of Copenhagen).
ID64	*Comparing Next-Day Wildfire Predictability of MODIS and VIIRS Satellite Data*
	Justus Karlsson (Linköping University), Yonghao Xu (Linköping University), Amanda Berg (Linköping University), Leif Haglund (Linköping University).
ID75	*Characteristic-driven Deep Learning in Synthetic Aperture Radar Target Recognition*
	Xiaoyan zhou (National University of Defense Technology), Zhuo Su (University of Oulu), Tao Tang (National University of Defense Technology), Li Liu (National University of Defense Technology), Gangyao Kuang (National University of Defense Technology).
ID77	*Are generative models fair? A study of racial bias in dermatological image generation*
	Miguel López-Pérez (Universitat Politècnica de València), Søren Hauberg (Technical University of Denmark), Aasa Feragen (Technical University of Denmark).

ID83	*NVSMask3D: Hard Visual Prompting with Camera Pose Interpolation for 3D Open Vocabulary Instance Segmentation*
	Junyuan Fang (Aalto University), Zihan Wang (Aalto University), Yejun Zhang (Aalto University), Shuzhe Wang (Aalto University), Iaroslav Melekhov (Aalto University), Juho Kannala (Aalto University).
ID92	*A Comparison of Deep Learning Methods for Cell Detection in Digital Cytology*
	Marco Acerbis (Uppsala University), Joakim Lindblad (Uppsala University), Nataša Sladoje (Uppsala University).
ID104	*Single-Image Localised Reflection Removal with k-Order Differences Term*
	Radim Spetlik (Visual Recognition Group), Jiri Matas (CTU).
ID111	*Simulated Training Data for Deep Learning-Based X-ray Tomography*
	Mary Chris Go (LIACS, University of Leiden), Daniël M Pelt (LIACS, University of Leiden), K Joost Batenburg (LIACS, University of Leiden). Abstract submission.
ID116	*Identifying bycatch on pelagic fishing vessels using semi-supervised anomaly detection*
	Stefan Hein Bengtson (Aalborg University), Malte Pedersen (Aalborg University), Mathias Søgaard (The Danish Pelagic Producers Organization), Claus Reedtz Sparrevohn (The Danish Pelagic Producers Organization), Kamal Nasrollahi (Aalborg University). Abstract submission.
ID121	*SpaceMASt3R: Map-based Georeferencing of Line Scanner Satellite Imagery utilizing Deep Neural Networks*
	Michael Greza (Technical University of Munich), Felix Plantenberg (Technical University of Munich), Boris Jutzi (Technical University of Munich). Abstract submission.
ID126	*Beyond Words: Exploring Cultural Value Sensitivity in Multimodal Models*
	Srishti Yadav (University of Copenhagen), Zhi Zhang (University of Amsterdam), Daniel Hershcovich (University of Copenhagen), Ekaterina Shutova (University of Amsterdam). Abstract submission.

Poster session 4

Thursday, 25 of June. 13:00-14:00

ID11	*Semi-Supervised Contrastive Training for Similar Image Identification in a Large Collection of Historical Books*
	Ruilin Wang (University of Helsinki), Lidia Pivovarova (University of Helsinki), Yann Ryan (Leiden University), Mikko Tolonen (University of Helsinki).
ID33	*SunVid: A Curated Online Video Database for Sundown Syndrome Research*
	Qianru Xu (University of Oulu), Mengting Wei (University of Oulu), Huai-Qian Khor (University of Oulu), Feng Vankee Lin (Stanford University), Guoying Zhao (University of Oulu).
ID49	*Evaluating the Accuracy and Reliability of Camera-Based Physiological and Motion Signal Extraction Techniques in Virtual Reality Training Environments*
	Tharindu Ekanayake (University of Oulu), Constantino Álvarez Casado (University of Oulu), Nhi Nguyen (University of Oulu), Marta Sobocinski (University of Oulu), Sari Pramila-Savukoski (University of Oulu), Xiaoting Wu (University of Oulu), Kristina Mikkonen (University of Oulu), Miguel Bordallo López (University of Oulu).
ID57	*Continuous Normalizing Flows for Uncertainty-Aware Human Pose Estimation*
	Shipeng Liu (Linköping University), Ziliang Xiong (Linköping University), Per-Erik Forssén (Linköping University), Bastian Wandt (Linköping University).
ID65	*Quantifying Epistemic Uncertainty in Absolute Pose Regression*
	Fereidoon Zangeneh (KTH Royal Institute of Technology), Amit Dekel (Univrses AB), Alessandro Pieropan (Univrses AB), Patric Jensfelt (KTH Royal Institute of Technology).
ID76	*Diffusion Based Ambiguous Image Segmentation*
	Jakob Christensen (The Technical University of Denmark), Morten Rieger Hannemose (The Technical University of Denmark), Anders Bjorholm Dahl (The Technical University of Denmark), Vedrana Andersen Dahl (The Technical University of Denmark).
ID84	*Out-of-Distribution Detection in Point-of-Care Ultrasound Breast Imaging using Variational Autoencoders*
	Jennie Karlsson (Lund University), Oskar Åström (Lund University).
ID106	*Evaluating treatment recommendations for prostate cancer given by an AI model*
	Ewert Bengtsson (Uppsala university). Abstract submission.
ID112	*3D deep brain segmentation for MRI using region-based convolutional neural networks*
	Mengyu Li (University of Iceland), Magnús Magnússon (University of Iceland), Ingibjörg Kristjánsdóttir (University of Iceland), Thilo von Eimeren (University of Cologne), Lotta Ellingsen (University of Iceland). Abstract submission.

ID8	*Addressing degeneracies in latent interpolation for diffusion models*
	Erik Landolsi (Chalmers University of Technology), Fredrik Kahl (Chalmers University of Technology).
ID18	*PHASE: Physiological Dynamics-Based Attention for SpO2 Estimation*
	Shahzad Ahmad (Østfold University College), Surajit Mukherjee (Indian Statistical Institute), Sukalpa Chanda (Østfold University College), Shivakumara Palaiahnakote (University of Salford), Umapada Pal (Indian Statistical Institute), Marius Pedersen (NTNU Gjøvik).
ID71	*Efficient Object-Centric Learning for Videos*
	Rickard Maus (KTH Royal Institute of Technology), Atsuto Maki (KTH Royal Institute of Technology).

Poster session 5

Wednesday, 25 of June. m. 14:30-15:30.

ID12	*pix2pockets: Single Image Ball Detection for Shot Suggestions in 8-Ball Pool*
	Viktor Petersen (Technical University of Denmark), Jonas Schiøtt (Technical University of Denmark), Dim Papadopoulos (Technical University of Denmark).
ID26	*Infused Suppression Of Magnification Artefacts For Micro-AU Detection*
	Huai Qian Khor (University of Oulu), Yante Li (University of Oulu), Xingxun Jiang (Southeast University), Guoying Zhao (University of Oulu).
ID37	*Visual Re-Ranking with Non-Visual Side Information*
	Gustav Hanning (Lund University), Gabrielle Flood (Lund University), Viktor Larsson (Lund University).
ID52	*Sex Classification from Human Scent Using Image Interpretation of 2D Gas Chromatography-Mass Spectrometry Data*
	Jan Hlavsa (CTU), Radim Spetlik (Visual Recognition Group), Jana Čechová (UCT), Petra Pojmanová (UCT), Jiri Matas (CTU), Štěpán Urban (UCT).
ID58	*A spectral-preserving zero-shot technique for hyperspectral pansharpening*
	Giuseppe Guarino (Federico II University), Giuseppe Scarpa (Parthenope University), Matteo Ciotola (Federico II University).
ID66	*Data-Efficient Limited-Angle Tomography Using Deep Priors and Regularization*
	Esko Vahteristo (LUT university), Zhi-Song Liu (LUT University), Andreas Rupp (Saarland University).
ID85	*Demosaicing and Neural Network Based Image Reconstruction in the Presence of Noise*
	Gustav Mark-Hansen (University of Copenhagen), Frederik Henriques Altmann (University of Copenhagen), Christian Igel (University of Copenhagen), Ankit Kariryaa (University of Copenhagen).
ID99	*Assessing the Efficacy of Multi-Task Learning in Mammographic Density Classification: A study on Class Imbalance and Model Performance*
	Suaiba Salahuddin (UiT), Elisabeth Wetzer (UiT), Kristoffer Wickstrøm (UiT), Solveig Thrun (UiT), Michael Kampffmeyer (UiT), Robert Jenssen (UiT).

ID107	*On Robustness of Token Reduction Methods*
	Joakim Haurum (Aalborg University), Sergio Escalera (Universitat de Barcelona), Graham Taylor (University of Guelph), Thomas Moeslund (Aalborg University). Abstract submission.
ID113	*VNNE: Implicit Ensemble Approach for Neural Networks*
	Marek Vajgl (University of Ostrava), Vojtech Molek (University of Ostrava), Zahra Alijani (University of Ostrava), Petr Hurtik (University of Ostrava). Abstract submission.
ID118	*Foundation models evaluated on a multi-center histopathology cohort*
	Iulian Tampu (Linkoping University), Per Nyman (Crown Princess Victoria Children's Hospital and Linköping University), Christoforos Spyretos (Linköping University), Ida Blystad (Linköping University), Alia Shamikh (Karolinska Institutet), Gabriela Prochazka (Karolinska Institutet), Teresita Díaz de Ståhl (Karolinska Institutet), Johanna Sandgren (Karolinska Institutet), Peter Lundberg (Linköping University), Neda Haj-Hosseini (Linköping University). Abstract submission.
ID123	*Physics-informed deep learning for improved input function estimation in motion-blurred dynamic [18F]FDG PET images*
	Christian Salomonsen (UiT - The Arctic University of Norway), Kristoffer Wickstrøm (UiT - The Arctic University of Norway), Elizabeth Wetzer (UiT - The Arctic University of Norway), Samuel Kuttner (UiT - The Arctic University of Norway). Abstract submission.
ID44	*Automated Cardiac Adipose Tissue Segmentation in Computed Tomography: A Literature Review*
	Andreas Aspe (DTU), Jonas Pedersen (Copenhagen University Hospital), Andreas Johansen (Copenhagen University Hospital), Klaus Kofoed (Copenhagen University Hospital), Kristine Sørensen (DTU), Rasmus Paulsen (DTU), Josefine Sundgaard (DTU).
ID51	*Comparative Analysis of rPPG and Motion-Based Approaches for Heart and Respiration Rate Estimation from Videos*
	Nhi Nguyen (CMVS, University of Oulu), Constantino Álvarez Casado (CMVS, University of Oulu), Le Nguyen (CMVS, University of Oulu), Manuel Lage Cañellas (CMVS, University of Oulu), Miguel Bordallo López (CMVS, University of Oulu).
ID62	*Aligning Subjective and Objective Assessments in Super-Resolution Models*
	Muhammad Hamza Zafar (NTNU Norwegian University of Science and Technology), Jon Yngve Hardeberg (NTNU Norwegian University of Science and Technology).

QIM Workshop

The QIM Center will host a workshop at the Scandinavian Conference on Image Analysis 2025, to be held at the University of Iceland campus in Reykjavík, Iceland. The workshop is targeted the SCIA participants and will take place on **Sunday, June 22nd**, preceding the main conference program, and will focus on the challenges associated with large-scale datasets and their evaluation in image analysis.

Challenges in analysis of large image data

The development of AI, particularly in image analysis, is fundamentally driven by the availability and quality of data. As the volume and complexity of image datasets continue to expand, it becomes crucial to develop robust methodologies for their effective analysis. Advanced models require extensive datasets for training, and to enhance their performance, we need benchmarks that accurately reflect this reality. At this workshop, you will see examples of how these challenges are being tackled within different data formats and modalities, and you will have the opportunity to engage in discussing future data requirements to advance AI in image analysis.

The workshop will feature **poster presentations** and **invited speakers**.

12:00–12:45	Lunch
12:45–13:00	Welcome and Introduction
13:00–13:30	Nico Lang: Learning From Global Earth Observation Data
13:30–14:00	Björn Þór Jónsson: On The Importance of Data Access Patterns
14:00–14:15	Break
14:15–14:45	Alexandra Branzan Albu: Underwater Environmental Monitoring with Computer Vision Methods
14:45–15:15	Vedrana Andersen Dahl: Deep-learning-based segmentation for synchrotron 3D imaging: state of the art and challenges
15:15–15:45	Break
15:45–16:45	Panel discussion

Speakers

Nico Lang
Assistant Professor at the University of Copenhagen

Learning From Global Earth Observation Data

The volume of unlabeled Earth observation data is huge. To interpret this vast amount of data, efficient modelling approaches are needed that can generalize to large geographic areas and are robust to inherent noise. Data-driven approaches promise great potential for interpreting and combining data from different space missions. In this talk, I will present our work on global canopy height mapping with optical satellite images and sparse spaceborne lidar data and discuss a recent project called MMEarth that explored multi-modal pretext tasks for learning representations that are suitable for a range of downstream tasks with limited training data.

On The Importance of Data Access Patterns

In this day and age, it is rare to find multimedia retrieval applications that focus on small media collections, yet the research community largely continues to do research using yesterday's small-scale benchmark collections. In this talk we argue the need for scalability and why this eventually boils down to understanding and managing data access patterns. We present two successful scalability projects from the past, addressing large-scale copy detection under different workload assumption that lead to different requirements for data access patterns. Finally, we briefly outline a current multimedia analytics project with particularly difficult data access patterns, where we have made some advances but further techniques are needed.

Björn Þór Jónsson
Professor at Reykjavik University

Alexandra Branzan Albu
Professor at the University of Victoria

Underwater Environmental Monitoring with Computer Vision Methods

This keynote explores computer vision and deep learning approaches for semantic segmentation in large-scale, heterogeneous underwater acoustic datasets. We present novel architectures and training strategies designed to detect marine organisms and physical phenomena—such as finfish, krill, jellyfish, and sea surface boundaries—across months of multi-frequency echogram data collected under diverse environmental conditions. Emphasizing generalization, fusion techniques, and annotation refinement, this talk offers insights into adapting computer vision methods to complex, real-world scientific data at scale.

Deep-learning-based segmentation for synchrotron 3D imaging: state of the art and challenges

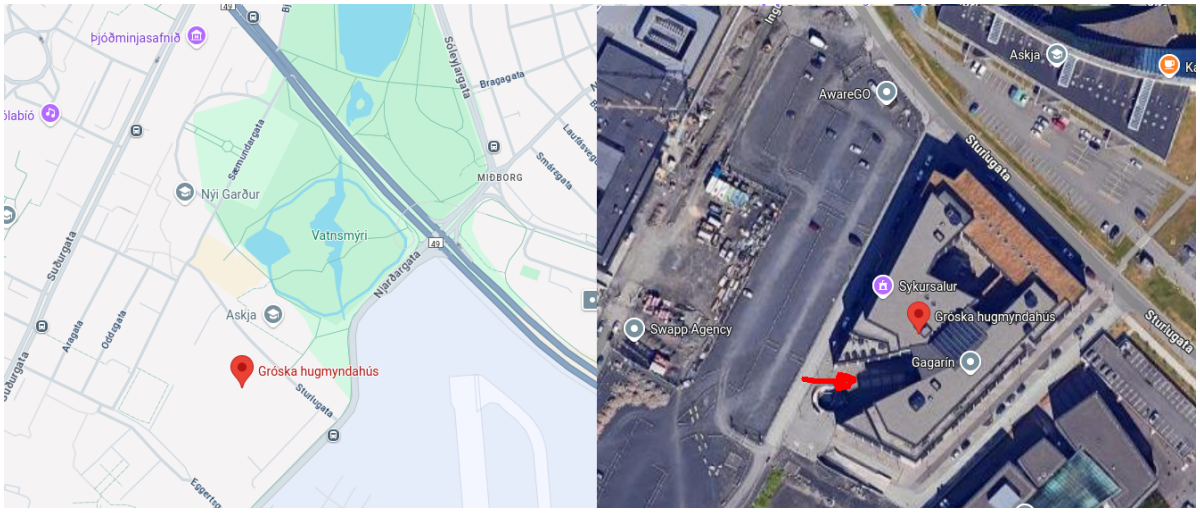
Despite remarkable advances in deep-learning-based segmentation, scientists using 3D imaging at synchrotrons continue to face challenges in analyzing the precious data collected at these world-class facilities. There seems to be a large discrepancy between the maturity of state-of-the-art segmentation methods in computer vision and their performance on the unique datasets produced by synchrotron imaging. Are the image features in scientific imaging fundamentally different from those in conventional photography? Is the lack of annotated data a major barrier? Or do segmentation models simply struggle with 3D? To explore these questions, we conducted a comprehensive review of the literature at the intersection of synchrotron imaging and deep learning. We identified the most commonly used methods and annotation strategies, gathered publicly available datasets, and reproduced key published results. In addition, we evaluated the performance of several widely adopted architectures, as well as some emerging models. Our findings reveal considerable variation in the effectiveness of deep learning across datasets and tasks, but patterns and trends are beginning to emerge.

Vedrana Andersen Dahl
Associate Professor at the Technical University of Denmark

Useful Information

Conference Venue

The conference is hosted by the **University of Island** (Háskóla Íslands, HI). The main conference track will take place in **Gróska building**, an innovation hub within the University campus.



Excursion and Dinner

There will be a half-day excursion including visits to the Geysir geothermal area and Gullfoss waterfall. Bring comfortable clothes. On the way back to Reykjavík, we will eat at Hver in the town of Hveragerði. It will be a 3-course meal, and dietary requirements indicated in the registration form will be taken into consideration.

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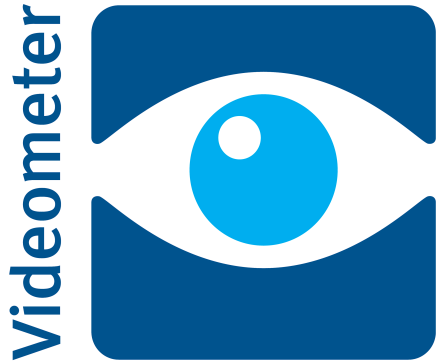
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