SSBAktuellt

»»»» nr 67 december 2022

TissUUmaps, read
more on page 5

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INNEHÅLL

Title photo: Andrea Behanova
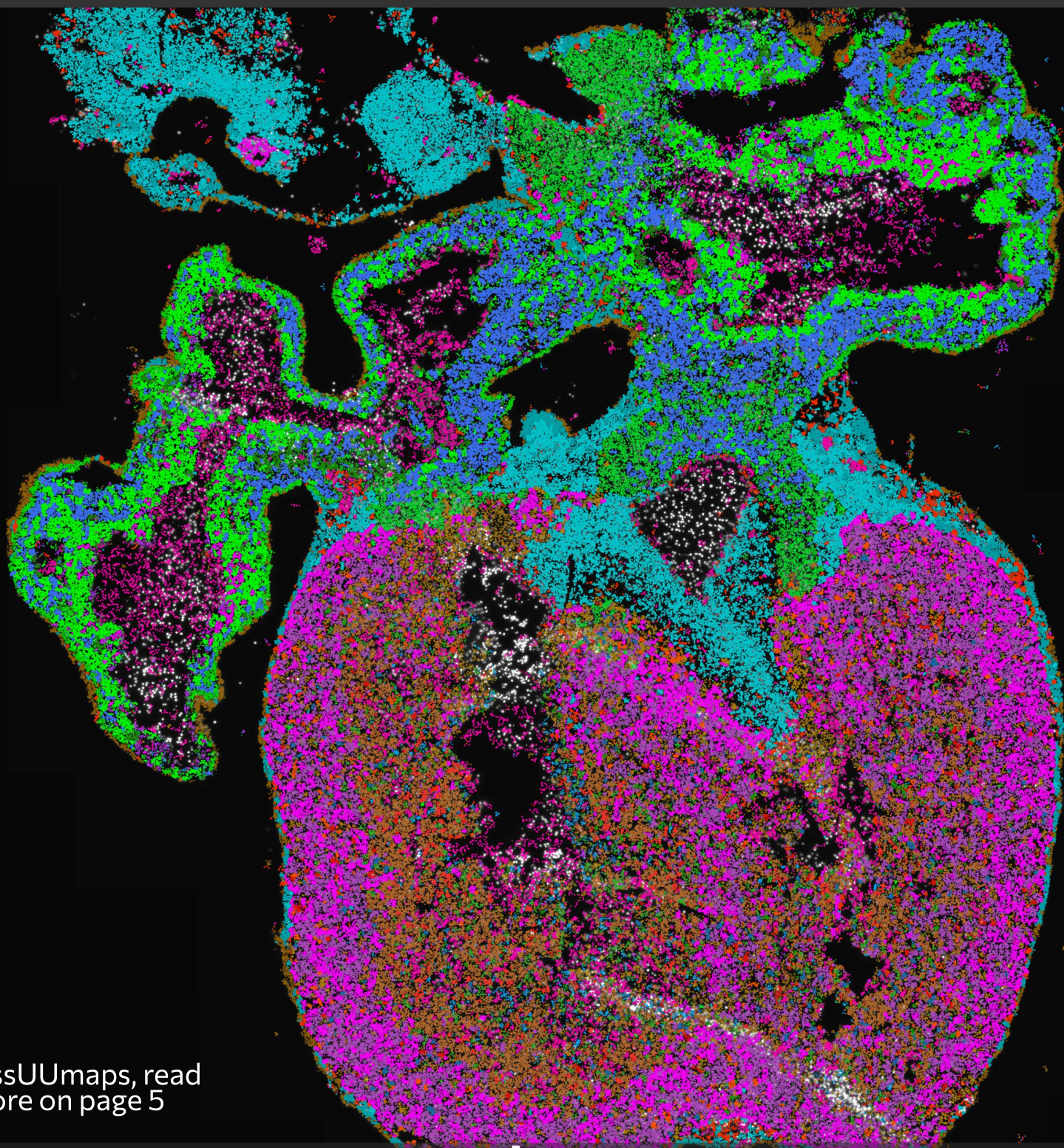
December 2022

Ordförandes Ord

Amanda Berg

Den 5:e december landade ett gäng glada bildanalytiker på Kallax flygplats, Luleå. Målet - SSBAs i ordningen fjärde lunch till lunch internat. Historiskt har vi sett hur dessa internat resulterat i många spännande engagemang. Det blev ett intensivt och trevligt dygn med massor av givande diskussioner och bra idéer som följd. En av SSBA-aktuellts redaktörer, Deniz, har i detta nummer skrivit en sammanfattning av vad som diskuterades under internatet.

I detta nummer får vi även reserapporter från ICPR och ECCV. Missa inte heller artikeln om Tim som tilldelats Lilla Polhemspriset 2022 för sitt exjobb med titeln "3D Reconstruction from Satellite Imagery Using Deep Learning".

Sist men inte minst vill jag, i erfarenhet av delad general chair för SSBA- och SSDL-symposiet 2023 varmt välkomna er till Norrköping/Kolmården och Vildmarkshotellet den 13-15 mars. Som vi längtat efter att få anordna ett IRL-symposium! Vi hoppas på många spännande bidrag och inte minst möten. Med lite tur även möten med vilda djur...

Jag vill avsluta med att önska er alla en riktigt god jul och ett gott nytt år. Ta hand om er så hoppas jag att vi ses i mars på symposiet!

December 2022, Sweden

A Word from the Editors
New Editorial Team

Dear SSBA Community,

Starting from this issue, Andrea and Deniz join the editorial team of SSBAktuellt! Andrea is a 3rd year PhD student at Uppsala University working on the TisUUmaps project with Carolina Wählby. Deniz is in 2nd year of his PhD studies and works in ultrasound imaging with Orcun Goksel.

For your ideas and contents that you want to see featured in future issues of SSBAktuellt, contact us at redaktionen@ssba.org.se.
Best regards,
SSBAktuellt Redaktionen

Deniz   Andrea   Elisabeth   Raphaela

A Word from the Editors
Call for SSBAktuellt Cover Images

Do you have photos, images or graphics you would like to share with the SSBA community that would fit the SSBA newsletter? Images connected to Sweden, your research, SSBA activities or graphics which relate to image analysis are all welcome! Please send your proposals to redaktionen@ssba.org.se.
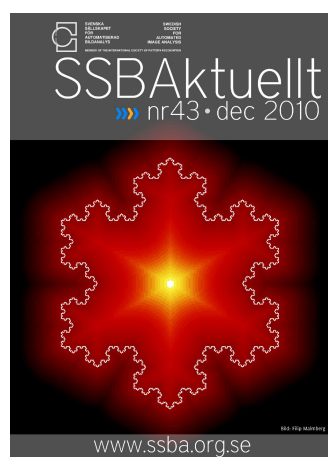
Title page
TissUUmaps
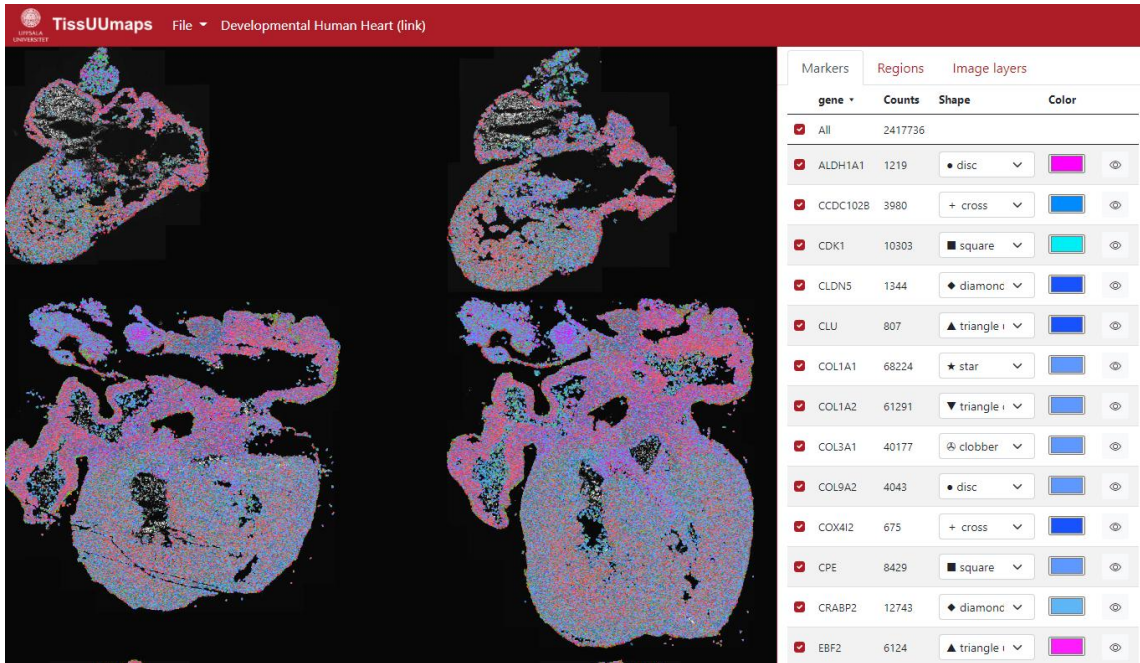
The image you could observe on the title page is a screenshot from the TissUUmaps Viewer, displaying in situ sequencing dataset of the developing human heart, where the different colors represent different clusters identified using graph neural networks with gene expression data (in the view above) as input. Analysis of gene expression directly in tissue samples provides a link between genome analysis and digital pathology, opening up new ways of understanding tissue development and disease. The datasets are often very large, and information is best explored interactively at multiple resolutions. Furthermore, sharing data with the scientific community is difficult due to slow and costly data transfer. Therefore, TissUUmaps was developed. TissUUmaps is a browser-based tool for fast visualization and exploration of millions of data points overlaying a tissue sample, and solves the problem of data sharing as it can be used as a web service, and allows users to draw and share regions of interest and local statistics, such as the clustering results on the title page.

TissUUmaps was developed in the Wählby lab led by Carolina Wählby in the Center for Image Analysis, Dept. of IT, at Uppsala University. The project started already in 2015, and originally, the project was called TissueMaps, but to avoid confusion with other tools, it was re-named to TissUUmaps, emphasizing loyalty to 'UU', Uppsala University.

TissUUmaps is used in many research groups around the whole world to share and explore spatially resolved omics data. You can visit the TissUUmaps website at https://tissuumaps.github.io/ to investigate the project gallery with interactive examples to explore data from in situ sequencing and spatial transcriptomics experiments and view localized quantification of cell and tissue morphology, including links to publications. You can also visit the tutorials page to see examples of TissUUmaps compatibility with other platforms.

Conference Report
ICPR 2022

Georg Bökman reports on the 26th International Conference on Patter Recognition which took place in Montréal, Canada, August 21 - 25, 2022.

This summer, the 26th ICPR was held in Montreal, Canada. It was my first time visiting and I found the city to be a good mix between the skyscraper madness of a North American metropolis and the pedestrian-friendly streets that would perhaps be more expected in Europe. The park on the Mont Royal is well worth a visit – the view from the top is stunning as one can see the entire city center down to the St. Lawrence stream, which is the river that the original French settlers travelled up from the Atlantic Ocean. I was (perhaps ignorantly) surprised by the amount of French being spoken and written in Montreal, the stand out memory being an occasion when I tried to buy ice-cream and the teen vendor knew only very rudimentary English.

The conference was held in a large building close to the Old Port district. The first day was committed to workshops as well as tutorials and I got to learn about applications of pattern recognition to remotely sensed data. On the second day, the main conference started, with a broad mix of topics ranging from Natural Language Processing to 3D Pose Estimation.
The schedule was well thought out, alternating keynotes, oral presentation sessions, coffee breaks and poster sessions. The poster sessions were however a bit peculiar this year as there were no physical posters! Instead, each presenter had a couple of minutes to speed pitch their work. Another difficulty this year was the fact that, due to pandemic restrictions, not all presenters were able to travel to the conference. Hence, many of the presentations were virtual. Nevertheless, at least for those of us present at the conference, ICPR was a great opportunity to interact with other researchers.

I had the fortune to do a longer oral presentation and presented work on deep learning on spherical images. As luck would have it, Montreal has a famous spherical dome, housing a museum dedicated to the environment. I snapped a picture and included it in my presentation.
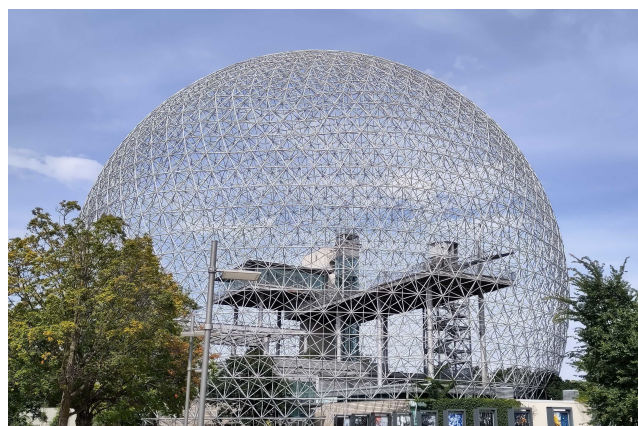

Image: Georg Bökman

My favourite keynote was by Kristen Grauman from the University of Texas. She presented work on multimodal deep learning, in particular on how to use audio input to improve visual navigation. Multimodal deep learning seems to be very popular at the moment, being a key theme at both ICPR and CVPR this summer.

Sweden was well represented at the conference, contributing ten papers, i.e. more than one percent of the total. All in all, I enjoyed the conference and would like to revisit the city of Montreal in the future.

The Author

Georg Bökman
PhD student
Chalmers University of Technology

Conference Report
ECCV 2022

Ankit Gupta reports on the European Conference on Computer Vision (ECCV) October 2022, Tel Aviv, Isreal.

Images: Ankit Gupta, Ida-Maria Sintorn

The European Conference on Computer Vision (ECCV) is one of the major conferences in the field of computer vision and pattern recognition. The conference is organized every two years alternating with the International Conference on Computer Vision (ICCV). The 17th iteration of the conference took place in Tel Aviv, Israel from October 23rd to 27th 2022 with the first two days reserved for workshops and tutorials and the remaining for the main conference. The conference program included 60 workshops and 13 tutorials with over 4,000 participants.

Our work titled Towards Better Guided Attention and Human Knowledge Insertion in Deep Convolutional Neural Networks authored by Ankit Gupta and Ida-Maria Sintorn was accepted for an oral presentation at the Bio-Image Computing workshop held on 23rd October. The workshop focused on the intersection of challenges in biological image analysis and computer vision techniques. The workshop included very interesting keynote presentations including an analysis of animal behaviour using AI, and using self-supervised learning to encode high-resolution features in protein localization.

Apart from the workshop, the main conference was very eventful with a lot of interesting talks and presentations. It was also very nice to talk and discuss ideas with the authors working in the same field during the poster sessions. This event was my first international conference after the pandemic and it was nice to interact with other researchers in-person instead of across my computer. Overall, the event allowed me to expand my knowledge and network in my research field and also explore the beautiful city of Tel Aviv.

The Author

Ankit Gupta
PhD student
Uppsala University

Workshop Report

4th SSBA Workshop

Can Deniz Bezek reports on the 4th Swedish Symposium on Image Analysis (SSBA) Workshop.

Images: Amanda Berg

The 4th SSBA workshop took place between 5-6 December in Luleå. Aim of the workshop was to develop plans to strengthen SSBA in focus areas of research, industry, and education.

The workshop was opened by the welcoming words of SSBA chair Amanda Berg. Among the participants, there were several board members, professors, and PhD students from various universities, such as Linköping University, Uppsala University, Lund University, KTH, and Luleå University of Technology (LTU). Representatives from Combitech, Maxar, and Swedish Defence Research Agency (FOI) also attended the retreat.

After participant presentations, we discussed mission, vision, and visibility of the SSBA. Some suggestions for visibility were possible collaborations, clearly stating membership benefits and updating the name of the SSBA to include more research areas and to be more modern. We also analyzed SSBA's position compared to other stakeholders in image analysis and machine learning. Then, participants were divided into three groups to discuss these aspects in each of three focus area. These discussions were later presented and analyzed within all participants. Based on these discussions, final action plans with concrete task planning and assignments were made.

During the workshop, Marcus Liwicki presented artificial intelligence (AI) research in LTU. Later, Tosin P. Adewumi, postdoc at LTU, presented various research and demos about AI in natural language processing, including hate speech detection, gender bias detection, and text creations based on keywords.
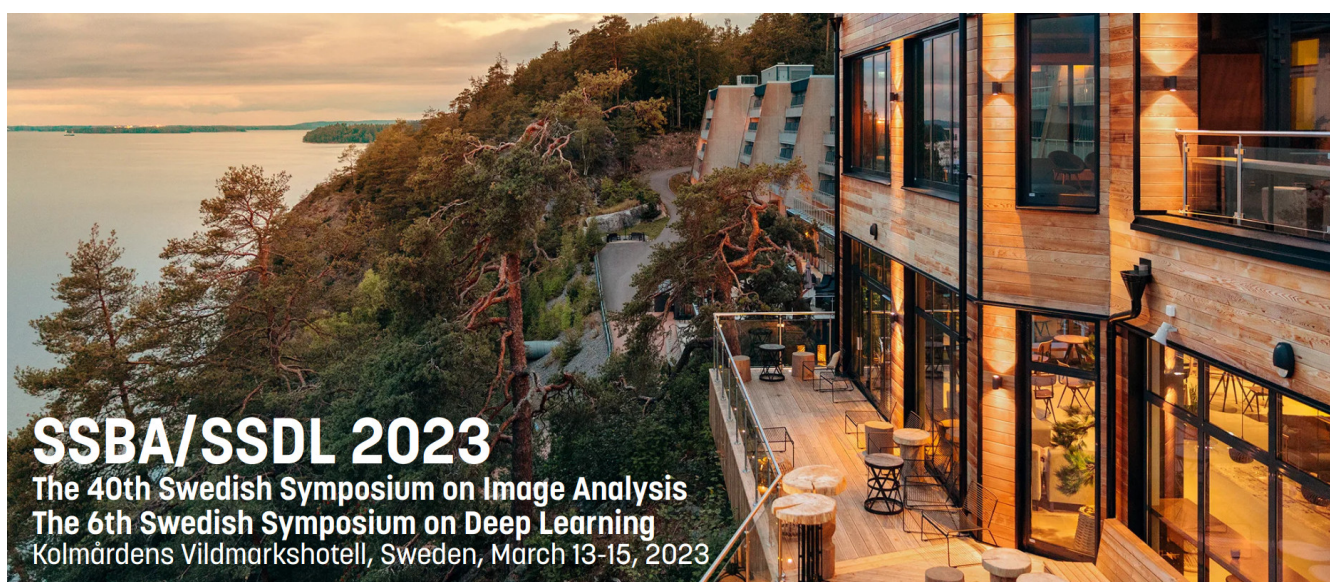
In summary, it was a very nice event with many interesting ideas that you hopefully will see implemented in the future. Also, the workshop was a great opportunity for me to meet members of SSBA from different universities and companies.

The Author

Can Deniz Bezek
PhD student
Uppsala University

SSBA and SSDL 2023

The joint 40th Swedish Symposium on Image Analysis (SSBA) and 6th Swedish Symposium on Deep Learning (SSDL) is arranged by Linköping University. The event takes place at the Kolmården Vildmarkshotell, March 13-15, 2023, with its scenic location next to the water in the Kolmården forest. Due to the location, accommodation will be included in the regular conference fee, and we thus encourage early registration.

We invite researchers from academy and industry to contribute to our joint symposium; short papers for SSBA and extended abstracts for SSDL.

We will also have a PhD student day in Norrköping, before the symposium starts. Preliminary, this will feature a guided tour at the Visualization Center C, together with a dome theater show. The PhD student day will conlude with a joint travel to Kolmården and a PhD student lunch at the Kolmården Vildmarkshotell.

We plan to open for submissions and registrations in January 2023. More details about the event can be found on the symposium webpage:
https://ssba.org.se/ssba2023/

Hope to see you all in Kolmården in March!

SCIA 2023

Welcome to the Scandinavian Conference for Image Analysis!

SCIA 2023 Call for papers
22nd Scandinavian Conference for Image Analysis (SCIA)
April 18-21, 2023, Hotel Levi Panorama, Lapland, Finland

SCIA 2023 invites submissions presenting original work in computer vision and pattern recognition. See the Website for a list of topics.

Important dates:
First round paper submission: July 29 2022
First round author notifications: September 30 2022
Second round paper submission: December 22 2022
Second round author notification: February 3 2023

Conference chairs:

General chair: Jiri Matas
Program chairs: Michael Felsberg, Rikke Gade, Joni Kämäräinen

Website: https://sites.google.com/view/scia2023
Venue information: levi.fi/en

Photo source: Visit Levi

The Scandinavian Conference on Image Analysis (SCIA) is a biennial conference on computer vision, image processing, pattern recognition and machine learning. It has been held since 1980 in the Scandinavian countries Sweden, Denmark, Norway and Finland. In 2023, SCIA will be organized as a winter conference in one of the most popular and exotic ski resorts in Finland, Levi. The conference program will contain top invited speakers, high quality scientific presentations, winter sports and mystique of Lapland.

SCIA 2023 is an all-inclusive winter conference that will combine top quality tutorials and plenary talks from distinguished researchers, high quality scientific program of oral and poster presentations, coffee breaks, lunches, dinners, Lapland banquet and sport breaks every day for those winter sport enthusiast and those who want to try them first time (introductory courses and sports gear available to participants). You will also experience some of the positive craziness of Lapland. Are you ready for this challenge?

2nd submission deadline: December 22, 2022
Notifications February 3, 2023
Camera-ready: February 24, 2023
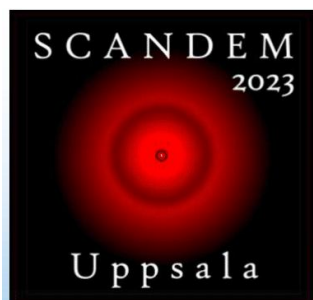Tutorials: April 18 2023
Main conference: April 19 - 21, 2023

SCIA 2023 accepts long and short papers. The maximum allowed length is 9 and 14 pages for short and long papers, respectively.

More information:
https://sites.google.com/view/scia2023

Conference Announcement

SCANDEM 2023

Call for papers at the 73rd Annual Meeting of the Nordic Microscopy Society

SCANDEM 2023

12-15 June, Uppsala, Sweden

We are excited to see you in Uppsala
and together build a meeting place
with talks about latest microscopy work,
with new microscopy products and
ample possibilities to discuss with your peers.

Plenary Speakers

Wolfgang Baumeister	-	TU München, D
Ute Kaiser	-	Ulm University, D
Michael Laue	-	Robert Koch Institute, D
Xiaoqing Pan	-	UC Irvine, USA
Frances Ross	-	MIT, USA
Xiaowei Zhuang	-	Harvard Med. School, USA

Registration opens:
Jan 15, 2023
Abstract deadline:
Mar 31, 2023
www.scandem2023.se

Conference Announcement
ICPR 2024

Preliminary Call for papers at the International Conference on Pattern Recognition 2024

Outlook 2023

Upcoming Conferences

JANUARY

Winter Conf. on Applications of Computer Vision (WACV)
wacv2023.thecvf.com/home
Jan3-7, 2023 - Waikoloa Hawai, USA

FEBRUARY

Intl. Conf. on Computer Vision Theory and Applications (VISAPP)
visapp.scitevents.org/
Feb 19-21, 2023 - Lisbon, Portugal

SPIE Image Processing
spie.org/MI23/conferencedetails/medical-image-processing
Feb 19-23, 2023 - San Diego, California, USA

SPIE Imaging Informatics for Healthcare, Research, and Applications
spie.org/MI23/conferencedetails/imaging-informatics
Feb 19-23, 2023 - San Diego, California, USA

SPIE Ultrasonic Imaging and Tomography
spie.org/MI23/conferencedetails/ultrasonic-imaging
Feb 19-23, 2023 - San Diego, California, USA

SPIE Digital and Computational Pathology
spie.org/MI23/conferencedetails/digital-and-computational-pathology
Feb 19-23, 2023 - San Diego, California, USA

MARCH

Swedish Symp. on Image Analysis (SSBA)/ Swedish Symp. on Deep Learning (SSDL)
ssba.org.se/ssba2023/
March 13-15, 2023 - Kolmårdens Vildmarkshotell, Sweden

APRIL

Scandinavian Conf. on Image Analysis (SCIA)
sites.google.com/view/scia2023/
April 18-21, 2023 - Levi, Finland

Intl. Symp. on Biomedical Imaging (ISBI)
biomedicalimaging.org/2023/
April 18-21, 2023 - Cartagena de Indias, Colombia

Intl. Workshop on Biometrics and Forensics - IWBF2023
warwick.ac.uk/fac/sci/dcs/people/victor_sanchez/iwbf2023/
April 19-20,2023 - Barcelona, Spain

MAY

Intl. Conf. on Representation Learning (ICLR)
iclr.cc/
May 1-5, 2023 - Kigali, Rwanda

Intl Conf. on Intelligent Systems & Pattern Recognition (ISPR)
ispr2023.sciencesconf.org/
Hammamet, Tunisia

JUNE
Conf. on Computer Vision and Pattern Recognition (CVPR)
cvpr2023.thecvf.com/
June 18-22, 2023 - Vancouver, Canada

JULY
Intl. Conf. on Pattern Recognition Systems (ICPRS)
http://www.icprs.org/
July 4-7, 2023 - Guayaquil, Ecuador

Medical Imaging with Deep Learning (MIDL)
2023.midl.io/call-for-papers.html
July 10-12, 2023 - Nashville, Tennessee, USA

Intl. Conf. on Machine Learning (ICML)
icml.cc/
July 23-29, 2023 - Honolulu, Hawaii, USA

Intl. Conf. on Image,Vision&Computing (ICIVC)
www.icivc.org/
July 27-29, 2023 - Dalian, China

AUGUST
Intl. Conf. on Document Analysis & Recognition (ICDAR)
icdar2023.org/
Aug 21-26, 2023 - San José, California, USA

SEPTEMBER
13th IAPR-TC15 Intl. Workshop on Graph-Based Representations in Pattern Recognition
gbr2023.unisa.it
Sept 6-8, 2023 - Salerno, Italy

Intl. Symp. on image & signal processing (ISPA)
www.isispa.org/
Sept 18-20, 2023 - Rome, Italy

DAGM German Conf. on Pattern Recognition
www.dagm-gcpr.de/year/2023
Sept 19-22, 2023 - Heidelberg, Germany

OCTOBER
International Conference on Computer Vision (ICCV)
iccv2023.thecvf.com
Oct 2-6, 2023 - Paris, France

Intl.Conf. on Medical Image Computing and Computer Assisted Intervention (MICCAI)
conferences.miccai.org/2023/en/
Oct 8-12, 2023 - Vancouver, Canada

IEEE Intl. Conf. on image processing
2023.ieeeicip.org/
Oct 9-12, 2023 - Kuala Lumpur, Malaysia

Call for Applications for IAPR Research Scholarships

IAPR Research Scholarships seek to make possible mobility across institutions and international boundaries for Early Career Researchers working in fields within the scope of the IAPR's interests. The scholarship covers round trip travel & basic living expenses for a visit of less than 12 months. The candidate must be a full-time researcher with between one and eight years experience. The candidate must also be a member of an IAPR member society. COVID-19: Applications are welcome, assuming pandemic travel regulations allow a visit during the proposed period.

Contact information:
IAPR Secretariat, c/o Linda O'Gorman, secretariat@iapr.org
More information:
https://iapr.org/docs/IAPR-EC-RS-Call.pdf

IAPR Call for Proposals for Summer Schools

Summer/winter schools are training activities that expose participants to the latest trends and techniques in the particular pattern recognition field. To be eligible for a grant, the organizers must work through at least one of the IAPR's technical committees as they develop and present the proposal.
How to Submit: Proposals for IAPR funded summer/winter schools should be submitted to IAPR Secretariat Linda O'Gorman by email (secretariat@iapr.org). A PDF attachment containing all the required information is appreciated
More information:
iapr.org/conferences/summerschools.php
Deadline: October 1, 2022

IAPR Call for Student Industrial Internship Listings

The IAPR-ILC wishes to promote opportunities for students to undertake internships at companies working in Pattern Recognition, AI, Computer Vision, Data Mining, Machine Learning, etc. We propose to do this by having a web-based internship listing service. Companies can list their internship opportunities; students can browse the listings and contact the company.
Contact information: Bob Fisher, Chair IAPR-Industrial Liaison Committee, rbf@inf.ed.ac.uk
IAPR Company Internship Brokerage List:
https://iapr.org/internships/

Announcement

Open Call for IAPR Prizes at ICPR 2024

The IAPR King-Sun Fu, J. K. Aggarwal, and Maria Petrou Prize Committees have issued the first open call for nominations for the following prizes:
2024 King-Sun Fu Prize, see https://iapr.org/fellowsandawards/awards_kingsunfu.php
2024 J. K. Aggarwal Prize, see https://iapr.org/fellowsandawards/awards_aggarwal.php
2024 Maria Petrou Prize, see https://iapr.org/fellowsandawards/awards_petrou.php

The prizes are dedicated to people who have had a major impact and outstanding contributions to the field of pattern recognition. Recipients of all prizes are expected to give a talk at the ICPR 2024 in Kolkata, India and to provide a contribution to the special issue of Pattern Recognition Letters.

Announcement

Call for Proposals for EWM-EMS Summer Schools 2024

European Women in Mathematics (EWM) and the European Mathematical Society (EMS) Women in Mathematics Committee invite proposals for a one week summer school at the Institut Mittag Leffler (IML) in Stockholm in 2024.
There are places for up to 30 participants, for whom the IML will cover lodging and most of the meals. The school should be on a focussed topic of current importance and open to PhD students and post-docs of all sexes.
Application Deadline: February 28, 2023
More Information:
www.europeanwomeninmaths.org/call-for-proposals-for-ewm-ems-summer-schools-2024/

Announcement

Lilla Polhemspriset

Tim Yngesjö, from Linköping University, received the Lilla Polhemspriset for his thesis, titled "**3D Reconstruction from Satellite Imagery Using Deep Learning**".

Congratulations!

The full announcement and more information about the prize: https://www.polhemspriset.se/polhemspriset-2022/

The thesis is available via diva:
http://urn.kb.se/resolve?urn=urn:nbn:se:liu:diva-176622

Announcement
Aktuella Avhandlingar

Här presenteras de avhandlingar som publicerats sedan senaste numret av SSBAktuellt och kommit redaktionen till känna. Meddela redaktionen om aktuella avhandlingar

Doktorsavhandlingar

Karin Stacke
Linköping Universitet
Deep Learning for Digital Pathology in Limited Data Scenarios

Martin Ahrnbom
Lunds Tekniska Högskola Kansliet
Computer Vision for Automated Traffic Safety Assessment: A Machine Learning Approach

Casper Winsnes
KTH Royal Institute of Technology
On computational methods for spatial mapping of the human proteome

Mohammad Aslani
University of Gävle
Computational and Spatial Analyses of Rooftops for Urban Solar Energy Planning

Sofia Broomé
KTH Royal Institute of Technology
Learning Spatiotemporal Features in Low-Data and Fine-Grained Action Recognition with an Application to Equine Pain Behavior

Marcus Klasson
KTH Royal Institute of Technology
Fine-Grained and Continual Visual Recognition for Assisting Visually Impaired People