SSBAktuellt

〉〉〉 nr 64 juni 2021

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›››› Innehåll

Cover: Rock Art on Öland
Photographer: Elisabeth Wetzer

›››› Ordförandes ord

Ida-Maria Sintorn

Hej!

Sommar och sol och äntligen kan man skönja en ljusning i Corna mörkret. Förhoppningsvis fungerar sommaravbrottet som en sista stöt mot smittspridningen så planen att återgå till en mer normal tillvaro efter semestrarna kan hållas!

I det här numret av SSBAktuellt ges lite tillbakablickar och personliga reflektioner kring symposier och konferenser som hållits under första halvan av året samt möjlighet till lite planering och framåtblickar med listor på doktorand-kurser och konferenser som kommer under hösten. Missa inte introduktionen av Synteda en ny företagsmedlem och så vill jag såklart avsluta med att säga stort grattis till alla våra nya doktorer!

Ha en skön sommar så hörs vi och kanske också ses vi på något sätt till hösten! Om inte förr så hoppas jag att många av oss ses i mars på 2022 års SSBA symposium i Uppsala!

›››› Rapport från SSBA/SSDL 2021

Niels Chr Overgaard

Det var i slutet av februari månad, på ett ECMI-möte i Darmstadt, som Anders Heyden övertygade mig om att bildanalysgruppen i Lund borde arrangera nästa SSBA symposium, det som skulle gått av stapeln 2020, och övertalade mig att vara ansvarig för att arrangera symposiet. Vi fick dessutom idén att det kunde vara spännande för deltagarna om evenemanget ägde rum på Lund universitets campus i Helsingborg.

Några månader senare, i juni 2019 när jag redan preliminärbokat lämpliga lokaler på Campus Helsingborg, fick jag dessutom att veta att det vore smidigt om SSDL kunde arrangeras i anslutning till SSBA. Så blev jag plötsligt ansvarig för två symposier istället för ett. Med stor hjälp från flera doktorander från bildgruppen lyckades vi planera ett spännande program för SSDL/SSBA 2020.

Som bekant blev SSDL/SSBA 2020 aldrig av! Coronan drog fram genom Europa, en del nervösa anmälda symposiedeltagare kontaktade mig och frågade hur det blev med evenemanget. Jag förhöll mig lugn. I början på mars 2020 var det fortfarande svårt att förstå hur det skulle utvecklas. Men den 11 mars, på kvällen, beslöt den danska statsministern Mette Frederiksen, att stänga ner stora delar av Danmark. Dagen därpå, vid lunchtid, beslöt jag att SSDL/SSBA 2020 skulle ställas in. Det var fyra dagar innan evenemanget skulle ha börjat och vi fick sätta igång att meddela restauranger, hotell och lokalbokare om beslutet.

Styrelsen för SSBA kom på årsmötet, som hölls digitalt på utannonserad tid, fram till att symposierna skulle skjutas upp till hösten. Det fungerade som bekant inte heller. I december beslöts det att SSDL/SSBA 2020 skulle bli SSDL/SSBA 2021 och hållas digitalt vid den vanliga symposietiden, tentamensveckan i mars. Jag tog en djup inandning, hittade fokus och samlade mitt trofasta team kring mig för ännu en insats.

SSDL/SSBA 2021 planerades och genomfördes 16--18 mars online och enbart under eftermiddagarna (alltså tre halvdagar.) Vi integrerade tre olika digitala plattformar: Canvas, Zoom och GatherTown. Den första användes för att ge deltagarna tillgång till program och konferensbidrag samt diverse relevanta zoom-länkar. Den andra användes för muntliga presentationer---inbjudna talare, SSBAs årsmöte, Prisutdelning och industrisessionen. Postersessionen och socialt umgänge skedde på den sista plattformen. Lite statistik: Det var 150 anmälda till symposierna, tre gånger fler än jag personligen hade räknat med, men så var deltagandet också gratis. Av dessa deltog mellan 60 och 100 personer under var och en av de tre dagarna, flest första dagen. Det var fyra inbjudna talare: Robert Jenssen, Tromsö, Martin Danelljan, ETH Zürich, Mathias Ohlsson, Lunds universitet & Högskolan i Halmstad, samt Mattias P Heinrich, Lübeck. Till postersessionen på SSDL inkom 18 bidrag och till föredragen på SSBA blev det 14 artiklar. Med tanke på omständigheterna är det min bedömning att SSDL/SSBA 2021 blev lyckat, men de flesta ser nog ändå fram emot ett SSBA 2022 i Uppsala under normala former.

Till slut vill jag bara nämna och tacka Linn Öström, Gabrielle Flood, Marcus Valtonen Örnhag och Anders Heyden, för deras viktiga insatser över två omgångar i arrangörsteamet. Utan dem hade det inte gått att genomföra symposierna.

Niels Chr Overgaard
Bildgruppen, Matematikcentrum
Lunds Universitet.

›››› PhD Report from SSBA/SSDL 2021

Ebba Bergman

In march 2020 I was on my way back from my first conference ever when I was told that there were two other conferences happening back to back a couple of weeks away that might be even more relevant to my studies. My supervisor, also on the train, quickly said that I should go and I excitedly started preparing the very next day.

As we all know, Covid19 caused SSBA/SSDL 2020 to be postponed twice. This year I finally got to go! I was in Uppsala, the conferences in Lund, and all of us met online. As with every conference I have attended from a distance, I made sure to brew a pot of my favourite tea, and have a fruit bowl ready for snacks. In this way I am trying to mimic the atmosphere of an in person conference.

A way the organizers helped mimic this atmosphere was by having sessions in Gather, a virtual environment where you can walk around with an avatar and talk to people through chat messages or video. I was instantly reminded of old GameBoy games. I tried really hard to get my avatar to face the right direction until I noticed that it didn't matter. Then started the process of finding interesting conversations to join, which was easier with these avatars than previous virtual conferences I have attended. It was much easier to join a group and "listen in".

However, as soon as I focused on meeting people rather than finding conversations I was quickly rewarded with interesting discussions with several other attendees. I was surprised by how much more aligned our fields of research are than the titles of their posters may have suggested to me. A lot of the conversations ended with an exchange of paper recommendations, or me saying "You should talk to this person!", which to me is a sign that networking virtually through 2020 has worked. By the time the pandemic started I had only worked for 3 months, and I can tell that I know more about different researchers and research fields now than I did a year ago.

Shortly before the conference I got an offer to chair a session, which I happily accepted. The topics started with the very applied "Learning Clothing Attributes for Video Surveillance using Fashion Datasets" presented by Denise Härnström and "Texture Enhancement in 3D Maps using Generative Adversarial Networks" presented by Anna Birgersson, and finished with the mathematically focused "Progressive Batching for Efficient Non-linear Least Squares" presented by Huu Le. I was very nervous beforehand, but after the first presentation I felt much more comfortable. While I was first worried I would have no questions to ask, I found myself having many of them once I had read the papers and seen the presentations. If anyone else is considering chairing a session I highly recommend it!

Naturally there were also several interesting lectures, where topics within one presentation could span everything from fighting forest fires, to simulating terrorist attacks. There was also a lecture about trying make up online. Except, none of the lectures were truly about those things but rather about the algorithms that can be used for those applications and how data collection as well as application plays a role.

In general the width of applications and similarity of approaches is what I will bring with me from both SSBA and SSDL. Next year I will be in Uppsala, as will the conference! I hope to see you at SSBA/SSDL 2022.

Ebba Bergman, PhD student within the HASTE project,
Pharmaceutical Bioinformatics, Uppsala University

›››› Företagspresentation: Synteda

Carla Johansson/Synteda

Synteda is an innovative IT company with focus on the latest technologies within artificial intelligence, Computer Vision and Data management. Synteda assist companies to embrace the era of AI effectively and take advantage of its vast possibilities by delivering innovative solutions.

Synteda has launched various platform solutions utilizing several cutting-edge technologies. Be-metrics solution by Synteda identify patterns on people's behaviour and learn about their preferences to provide unique experiences. The solution was made from scratch by skilled engineers to help businesses to make data-driven decisions based on analytics to improve visitor satisfaction.

Hotego is an easy-to-use application and system based on AI that allows users to effortlessly request any service with just one tap from the comfort of their rooms or visiting local landmarks. The application gives insights about guest's preferences that helps to optimize campaigns and events based on statistics.

HiveMind is a scriptless augmented testing tool that records data and learn from human interactions during test sessions. It analyses the test data providing the user with new and better ways to perform tests.

Synteda has grown rapidly with more than 20 team members and has offices in Gothenburg, Stockholm and Cracow. Synteda has a core team of highly qualified experts that provide assessment to identify challenges and explore different ideas to enhance effectiveness and develop specific algorithms to overcome company challenges.

Synteda is currently working on several products and providing solutions to several clients within various industry fields in close collaboration with top universities in Sweden.

"Every success starts with a dream. We help bring those dreams to life." says Maycel Isaac, CEO of Synteda.

›››› Defending your thesis online

🖊 📷　Leslie Solorzano

It's impossible not to imagine your own defense when you go to your friends' dissertations. For years I imagined a grandiose event, I was going to invite hundreds of people, and make an enormous celebration. However during corona times everything changed as you all know. But it is in our nature to adapt to all situations and it had to be done on zoom. Luckily the university has licenses and has had them for a long time along with interesting devices for streaming courses and events.

At the main university building Uppsala university, there is a room that I had only seen in videos for important lectures: Sal IX. I never thought I would be presenting in a place like this so beautiful and elegant. But there I was, I was given the opportunity to use all the fancy equipment for streaming via zoom.

Luckily up to eight people could accompany me in the room and participate in the defense. Logically my supervisor, head of division, friends and family were there. This was an important aspect that I am glad corona could not take away, the support from my team and the non-verbal communication. When I make a joke to ease the tension, it is very important that someone else smiles, and this is something I couldn't get from teaching online (or perhaps students just didn't laugh at all). But if I have any advice for a zoom defense it is to get someone to be with you, to have an interactive communication.

On the subject of online work and study, we were very lucky at the IT dept at UU to have a very proactive prefekt. She organized several gatherings of the whole department and encouraged us to participate in games and social activities. She even sent us small "fika" packs so that we could have coffee or tea while playing on zoom and kahoot. There was also a very interesting series of presentations called "get to know your department" where all divisions were presented. This was very interesting and it did help to bring us all closer.

In summary, despite not having an enormous defense and party, zoom allowed my collaborators, friends and family around the world to see my defense, which would not have been possible otherwise. We had very interesting conversations and that beautiful day marked the beginning of the summer.

If you are planning your defense to be online, do not despair, it will be better that it seems. Make sure to check for interesting venues in your university, they all pay zoom licences and have nice setups, so everyone as a student or teacher should make use of the available tools.

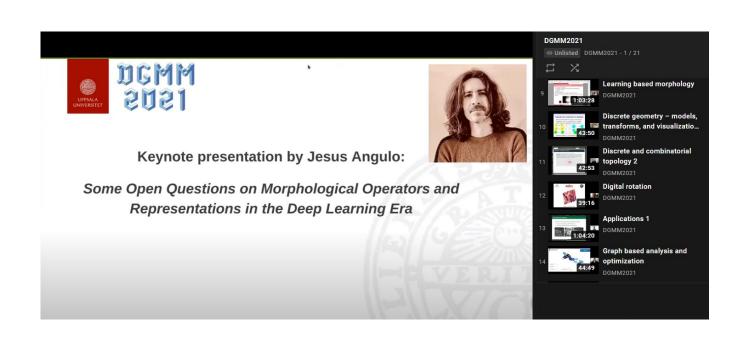Good luck in your online experiences!

›››› Report from DGMM 2021

Johan Öfverstedt

In the spring of 2021, I helped organizing the first ever instance of the DGMM (IAPR International Conference on Discrete Geometry and Mathematical Morphology) conference that aims to merge the communities of researchers and students of discrete geometry and mathematical morphology. For many years, the two separate conferences ISMM (International Symposium of Mathematical Morphology) and DGCI (International Conference on Discrete Geometry for Computer Imagery) have been going on separately even though the two fields have much in common.

Initially, the conference was to be a live event in the winter of 2020, but then Covid-19 happened, and the conference had to be postponed, especially since we wanted to try to avoid a digital event. We set a new date for the conference, May 2021, with the hope of being able to all meet up in Uppsala. Unfortunately, the situation did require us to go digital in the end.

The event took place on Zoom, over four days with 19 sessions, 39 talks, active discussions between the talks and on the discord, and many friends reuniting from the comfort of their homes and offices around the world. One surprise was that the technical glitches were remarkably few; I guess we have all learned how to operate in this digitized world.

I hope that there will be many more DGMM conferences in the years to come, and that the communities will continue to join forces in our quest for understanding both theory and applications of these fields.

›››› Report from ICPR 2020

Zahra Gharaee

This report describes my personal experience of participating in the 25th International Conference on Pattern Recognition (ICPR) of the year 2020, held on 10th to 15th of January of the year 2021 in Milan, Italy. Due to the pandemic situation caused by Covid-19, the conference was held on virtually and, therefore, all participants were attending in the conference in distance mode. ICPR has a number of sponsors including Google, IEEE, Elsevier and Springer. Our paper was eventually published in IEEE Xplore[1] and my presentation in the conference was also published in YouTube[2].

I received all necessary information regarding the conference program and all relevant procedure through conference webpage[3] as well as the emails sent by the conference organizers. The corresponding website was quite useful and contained constructive information about the virtual venue.

ICPR2020 contained 1411 Oral/Poster presentations, 5 Keynotes, 8 Tutorials, 28 Demos, 8 Challenges with about 40 participants, 2 panels and the Industry/sponsor exhibit at the Main Conference. In addition, it had 41 Workshops with more than 400 presentations. All the presentation materials were collected, checked and organized in the right slots of the program in the UNDERLINE[4] platform, and were tested before being made accessible to registered participants. UNDERLINE has requested that all the presentation material be uploaded into the platform by 10th of December 2020.

In ICPR2020 both oral and posters provided the same presentation materials and it gave oral papers just more visibility with respect to posters: they were presented both as oral and poster. Oral presentations were given either live or by pre-registered video, followed by live Q&A. Poster presentations were held in a GatherTown mode. Each virtual booth was displayed by an A4 poster with an overview of the research. Participants could open a live connection with the presenter who should attend the session. If needed, discussions were extended beyond the duration of the sessions.

ICPR 2020 has 7 keynote speakers[5], and the 4-days main program includes 5 keynote lectures. All paper accepted in the conference were categorized into 5 distinct tracks as mentioned in the following:

TRACK1 Artificial Intelligence, Machine Learning for Pattern Analysis
TRACK2 Biometrics, Human Analysis and Behavior Understanding
TRACK3 Computer Vision, Robotics and Intelligent Systems
TRACK4 Document and Media Analysis
TRACK5 Image and Signal Processing

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1 https://ieeexplore.ieee.org/abstract/document/9412200
2 https://lnkd.in/ejmu-kz
3 https://www.micc.unifi.it/icpr2020/
4 https://underline.io/
5 https://www.micc.unifi.it/icpr2020/index.php/keynote-speakers

In the first day of the conference, the venue started at 1:00 pm (CET) with the opening of the whole venue. I only participated in the main conference tracks and to this end, I created an account in UNDERLINE platform and the conference organizers sent me a file including the user guide for the attendees as well as a ticket from UNDERLINE. Since there were at least 6 parallel tracks in each panel, I had to make selections of which paper presentations to participate and attending in all presentations was not possible. Panels each having with several parallel tracks as regular sessions or a keynote lecture, where a track/keynote lecture lasts for 1 hour, spanned from 1:00 to 5:00 pm (CET). In the last day of the conference, the closing ceremony was held on at 6 pm including the Best Paper Awards event.

Our paper entitled: "A Bayesian Approach to Reinforcement Learning of Vision-Based Vehicular Control" was accepted to be presented in the in TRACK1 of main conference venue using a pre-registered video. The presentation was held on online in 15th of January 2021 through a regular session starts at 5:00 pm (CET), and during the whole session, I was available online as the presenter and the main participant from Computer Vision Laboratory (CVL), Department of Electrical Engineering, University of Linköping to address possible Q&A of the participants.

After the conference, the organizers sent me the publication of the 8-volume set that contained the Proceedings of ICPR2020 Workshops and Challenges. As registered participant of the ICPR 2020, I was allowed to access them for a period of 4 weeks using a preset password, which was also given to me by the organizers. I was also given a certificate of attendance, which was downloadable from my user area on registration platform.

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›››› Upcoming Conferences

Mexican Congress on Pattern Recognition (MCPR)
Date: July 23-26, 2021, online

International Conference on Machine Vision Applications (MVA)
Date: July 25-27, 2021, online

International Joint Conference on Biometrics (IJCB)
Date: August 4-7, 2021, hybrid in Shenzhen, China

Intl. Conference on Document Analysis and Recognition (ICDAR)
Date: Sept. 5-10, 2021, Lausanne, Switzerland

IEEE Intl. Conference on Image Processing (ICIP)
Date: Sept 19-21, 2021, Anchorage, Alaska, USA

Intl. Conference on Pattern Recognition and Information Processing (PRIP)
Date: September 21-24, 2021, online

Intl. Conference on Computer Vision Systems (ICVS)
Date: Sept 22-24, 2021, online

DAGM German Conference on Pattern Recognition (GCPR)
Date: Sept 28-Oct 1, 2021, online

Intl. Workshop on Artificial Intelligence and Pattern Recognition (IWAIPR)
Date: Oct 5-7, 2021, Havana, Cuba

Intl. Conference Computer Vision (ICCV)
Date: Oct. 11-17, 2021, online

IEEE Workshop on Applied Imagery Pattern Recognition (AIPR)
Date: Oct 12-14, 2021, Washington, D.C., USA

Computer Vision and Pattern Analysis Across Domains (OAGM)
Date: Nov 24-25, 2021, St. Pölten, Austria
Submission Deadline: **10th September 2021**

Neural Information Processing Systems (NeurIPS)
Date: Dec 6-14, 2021, online

Mediterranean Conference on Pattern Recognition and Artificial Intelligence (MedPRAI)
Date: Dec 17-18, 2021, online
Submission Deadline: **15th August 2021**

Intl. Conference on Pattern Recognition Applications and Methods (ICPRAM)
Date: Feb 3-5, 2022, Vienna, Austria
Submission Deadline: **14th September 2021**

›››› Upcoming PhD Courses

4th IAPR TC 10/11 Summer School on Document Analysis and Recognition
Date: Aug 23-27, 2021
Location: hybrid, Luleå University of Technology
Early bird registration deadline: **14th July 2021**

Using maths and computer science to do social good – Fun Fridays, 5-10hp
NOT ONLY FOR PHD STUDENTS!
Date: 18-20 Fridays during fall 2021, starting Sept 3.
Location: Uppsala University, off-campus participation possible

Computational Python (SeSE), 5hp
Date: Oct 18-22, 2021,
Location: KTH

Popular scientific presentation- focused on writing, 4-5hp
Date: Oct - Dec 2021
Location: Uppsala University
Contact: Ida-Maria Sintorn (ida.sintorn@it.uu.se)

›››› Aktuella avhandlingar

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

Doktorsavhandlingar

Leslie Solorzano, Uppsala University
Image Processing, Machine Learning and Visualization for Tissue Analysis

Marcus Valtonen Örnhag, Lund University
Robust Estimation of Motion Parameters and Scene Geometry: Minimal Solvers and Convexification of Regularisers for Low-Rank Approximation

Kimmo Kartasalo, Tampere University
(visiting student Uppsala University)
Machine Learning and 3D Reconstruction Methods for Computational Pathology

Ida Arvidsson, Lund University
Applications of Deep Learning in Medical Image Analysis: Grading of Prostate Cancer and Detection of Coronary Artery Disease

Gustav Häger, Linköping University
Learning Visual Perception for Autonomous Systems

Aleksis Pirinen, Lund University
Reinforcement Learning for Active Visual Perception

Andreas Robinson, Linköping University
Discriminative Correlation Filters in Robot Vision

Abdelrahman Eldesokey, Linköping University
Uncertainty-Aware Convolutional Neural Networks for Vision Tasks on Sparse Data