European Society of Medical Imaging Informatics

2017 Newsletter

EuSoMII Newsletter

European Society of Medical Imaging Informatics

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President's Note

Dear colleagues and friends, it is a great pleasure for me to present the new issue of EuSoMII newsletter.

First of all, I would like to thank Prof. Emanuele Neri for raising the Society in the previous years and for welcoming the team of peers to join the EuSoMII management. I have received a great honor to be elected as the President of the society in October 2016, while Erik Ranschaert has been elected as the Vice-President. This position challenges me to do more and better, to foster our cooperation within the Board and with the members, and to propose new ideas for EuSoMII.

Sergey Morozov, EuSoMII President

The Board's current tasks are mostly related to the internal processes and society's PR/marketing. We also have scheduled a series of webinars for 2017 and a EuSoMII Academy in October (exact dates and place - t.b.d.)

There have been several remarkable moments in 2016. The joint ESOI-EuSoMII congress has been elegantly held at LaFe hospital in Valencia. The meeting has attracted great minds of radiologists and IT specialists from many countries. Workshops have been especially useful and enjoyed by the participants.

In the end of 2016 we have applied to the ESR Executive Council for the change of the name of 'Computer applications' subcommittee into 'Imaging Informatics' subcommittee. As Peter van Ooijen said "EuSoMII has been put on the ESR map" after that change. This step further is very important in order to increase the visibility of our Society and to establish its' role in pan-European radiology projects.

EuSoMII is now officially affiliated with the ESR's journals, European Radiology, Insights into Imaging, and European Radiology Experimental.

EuSoMII website has been recently relaunched with the new functionalities and membership area which allows to access educational materials and discounted books on medical imaging informatics. Membership application now also works smoothly through the renovated website.

We are looking forward to have more webinars, meetings and activities in 2017!

Please join the European Society of Medical Imaging Informatics - www.eusomii.org

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EuSoMII Webinars

Nadya Pyatigorskaya, France
Ekaterina Klimova, Russia

Since more than one year the webinars are taking an important place in the life of EuSoMII society and its members.

Why webinars? There are 3 main reasons to prefer webinars.

Great sharing knowledge and education tool.

One of the goals of EuSoMII, the European Society of Medical Imaging Informatics, is spreading knowledge among its members as well as the radiological community. Up-to-date information about the latest innovations and achievements in medical imaging informatics is available in different ways: conferences, meetings and other events, online educational sessions and webinars.

Webinars had already proven their place as a powerful tool for distance learning and communicative exchange of knowledge.

Before making a list and schedule a plan of webinars, we consult with EuSoMII members and investigate the demand in other professional communitues. We try to make our webinars topical and actual for listeners.

Relationship and network building.

We believe that organizing webinars create more opportunities for dialogue and communication, leading to network building among professionals all over the globe.

Webinars are not only submitting questions in real time for discussion, they also make circulate listeners' contact information ahead so everyone can get more out. Speakers and listeners can make connections that will be useful in the future, especially on topics that do not lend themselves to webinars or for developing new approaches to problems.

We choose hosts for our webinar very carefully, picking well-known experts and opinion leaders in the domain so EuSoMII gives best opportunities to community grow stronger.

Webinars are handy.

In the era of rush, rapid development and high-speed Internet people pay more attention to such two factors as time and comfort. And here, webinars have undeniable advantages over other types of learning. Webinars don't require lots of time or lots of money to travel to learning course location. Participation in webinars doesn't generally require an extensive network - all you really need to have is a computer or other device with a decent Internet connection.

Since this educational tool became commonly used, EuSoMII is making its best of webinars. Nowadays, the growing number of EuSoMII members all around the world may be reassured that they are able to connect from wherever they are at the moment. Moreover, being a member allows to have an access to a webinar recording afterwards. Thus, if one has missed a webinar, or

Structured Reporting: Beyond Templates

5 January 20:00

▶ WATCH THE RECORD

Dear colleagues!

The first webinar will be hosted by MANSOOR FATEHI (MD, CIIP) who will be joining us to give a close look into "STRUCTURED REPORTING".

Webinar details: Structured reporting can be considered the reporting component of the precision imaging. This method should be able to manage imaging information in granular manner reflecting details of abnormal findings in a structured manner. So, templates that usually provide a framework for normal findings are not the best approach to implement structured reporting and a collection of modules seems to be a more practical way to build the infra-structure.

Not sure if you can attend the live session?
Please still register and we will send you the links to the WEBINAR recording and presentation content.

Hope to see you at the WEBINAR!

Kind regards,
EuSoMII administration team

EuSoMII Newsletter——2017

EuSoMII

EuSoMII
EUROPEAN SOCIETY
OF MEDICAL IMAGING INFORMATICS

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PACS replacement. 6:00 PM – 7:00 PM CET. 8:00 PM – 9:00 PM (Moscow time) 02/02/2017

2 February 20:00

▶ WATCH THE RECORD

Dear colleagues!

Our second webinar will be hosted by SERGEY MOROZOV (MD, PhD, MPH) who will be joining us to give a close look into "PACS REPLACEMENT".

Webinar details:
PACS has made a great progress from a pure storage and a radiologist's tool to a platform for interdisciplinary collaboration and big data analysis. It has allowed transition from analog to digital workflow and further in the direction of decentralized enterprise clinical imaging. Major drivers for PACS development are expansion of imaging into clinical areas, EHR integration, and radiological practices consolidation on regional and international levels.
The major trends of PACS development are the following: cross-functionality, cross-integration, patient-centric solutions, analytic tools development. Any PACS with a lack of standardization, workflow optimization and comprehensive viewing tools limits interoperability and efficiency of a radiology practice. A new PACS should enable communications, feedback, collaboration, second opinion, report interpretation, clinical integration, tumor board applications, reports dispersal to patients, and tracking of outcomes. It should be affordable, faster, integrated with voice recognition, EMR and prior studies.

Not sure if you can attend the live session?
Please still register and we will send you the links to the WEBINAR recording and presentation content.

Hope to see you at the WEBINAR!

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wants to see again a part of it, all the previous webinars are accessible on the website any time, so that the entire lecture or only its fragments can be viewed repeatedly.

The subjects that are discussed on the webinars concern actualities of medical imaging informatics, structured reporting, imaging biomarkers, machine learning, and many other radiology and medicine topics, important in our era of imaging 3.0. The first webinar of this year was presented by Mansoor Fatehi, who focused on the structured report as the reporting component of the precision imaging. He had emphasized that this method should be able to manage imaging information in granular manner reflecting details of abnormal findings in a structured manner. The second webinar, concerning the PACS replacement, presented by the EuSoMII President, Prof. Sergey Morozov. He has underlined the major trends of PACS development, being the cross-functionality, cross-integration, patient-centric solutions, and analytic tools development.

A large program of webinars was prepared for the coming months following the ECR and much more is still in process of working-up. The first post-ECR webinar will take place on March 9th with "What is deep learning and how might it impact radiology?" by Pr. Erickson Bradley, for Mayo Clinic, US. It will be continued on April 6th with "Cloud technologies in radiology: benefits, opportunities and risks"

by Dr. Erik R. Ranschaert, Belgium.

The new program of webinars is available on the website of EuSoMII at http://www.eusomii.com/live-webinars and will be constantly updated.

Subscribe to upcoming webinars, this will allow you to get a reminder before the start of each webinar and access it directly online. As a EuSoMII member you will receive the updates about the upcoming webinars on your email address. Also, as a member you have an access to the webinars records as well as presentation content in your personal account on our website http://www.eusomii.com/.

Webinars are currently opened to anyone but in the future they will be exclusively available to the members of EuSoMII. However, do not worry, becoming a member takes only a few minutes on the website.

You also have the opportunity to get actively involved in the webinars and in the Society's activities by suggesting a topic for a webinar or a speaker.

Hope to meet you soon on our webinar platform.
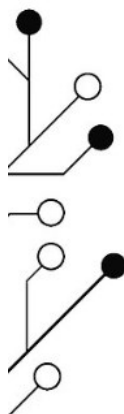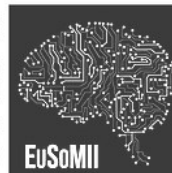
As EuSoMII is now officially an institutional member of ESR, activities of the related subcommittees of ESR will be covered in our newsletter. International collaborators of EuSoMII including SIIM and Radiology Informatics Committee of RSNA will be a constant part of the newsletter.

We intend to have a glimpse at hot topics of imaging informatics in each issue by pioneers and leaders of this field worldwide. And finally we will try to highlight corporate members of the society who support our activities

As a member, reader or someone interested in imaging informatics, you are invited to submit your articles, reports and events to be published in EuSoMII newsletter. (fatehi@irsr.org)

Joining forces in Medical Imaging Informatics Education

Being a multidisciplinary field Medical Imaging Informatics plays a role in every area of radiology and nuclear medicine. Therefore, joining forces with other subspecialty societies of ESR is a logical and beneficial approach to increase the knowledge of Medical Imaging Informatics. One of the ways to do this is jointly organising conferences (as the ESOI/EuSoMII joint conference) or conference sessions.

At the annual meeting of the European Society of Cardiovascular Imaging (ESCR) a session was organised in cooperation with EuSoMII on "Population Imaging and Biobanking" with a focus on cardiac radiology.

Chairs of the session were Peter van Ooijen (EuSoMII) and Fabian Bamberg (ESCR). Presentations were also provided by EuSoMII and ESCR.

Peter van Ooijen (EuSoMII) gave an introduction to imaging biobanks according to the European View.

Mansoor Fatehi (EuSoMII) presented on their experience in the research application of multi modality structured reporting for cardiac imaging.

Anders Persson (ESCR) presented on real time experience of a big data cardiac imaging study.

A lively discussion followed the presentations and responses were very positive. This certainly calls for a repeated effort to integrate EuSoMII sessions into existing conferences, thus spreading knowledge on Imaging Informatics in a broader community.

Figure 1 - Mansoor Fatehi and Peter van Ooijen at the ESCR Meeting

*Figure 2 - ESCR/EuSoMII Session overview*

3D Printing – for radiology to take? Or the surgeon's tool?

Peter van Ooijen, Joep Kraeima and Max Witjes

The last couple of years has seen the rise of 3D printing in a wide variety of application areas. The number of companies building and marketing printers has increased dramatically and printers can be bought ranging from a couple of hundred Euros to hundreds of thousands of Euros. Based on this increased use the implementation in medicine also has gained interest with major applications in surgical implants, training, planning and guidance. To this end different surgical disciplines have been experimenting for quite some time already with 3D printing. However, a lot of the printing done is based on Computed Tomography, Magnetic Resonance Imaging or even 3D Ultrasound data. Because of this, the question arises if there is a role to play for radiology in this field, or should we just provide the DICOM data and leave it?

If we look at the past years of RSNA, the US approach clearly shows an increase in the interest of radiology in 3D printing. Many of the 3D Printing labs are radiology based and provide the printing as a service to their requesting physicians much alike images and reports are delivered. The first-ever Special Interest Group of the RSNA was started in 2016 and on the topic of 3D Printing.

So, where is Europe on this? Past years did not show much interest in 3D Printing during ECR. Rumor has it that finally in 2017 the topic of 3D Printing will be prominently present at ECR.
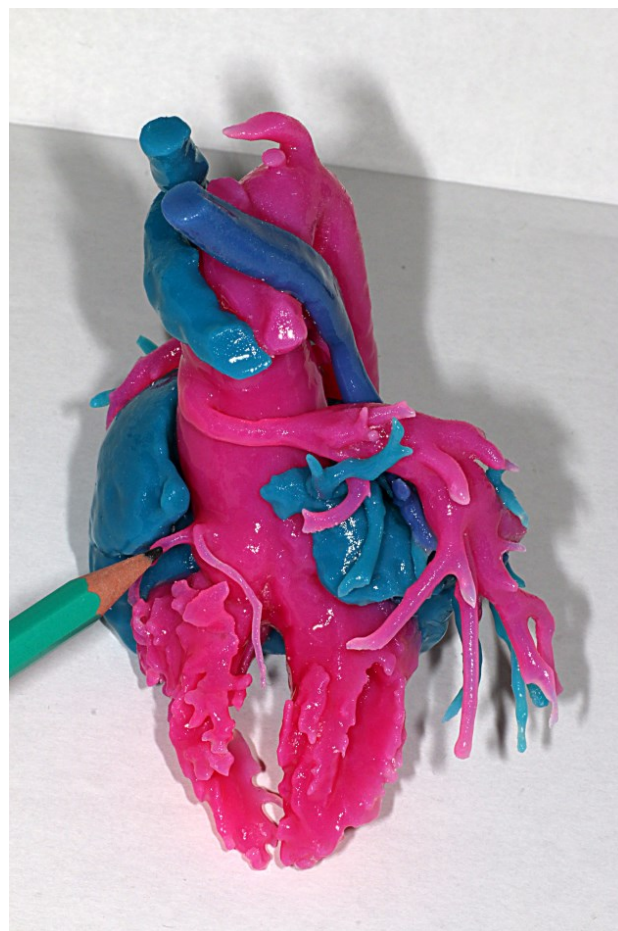
Therefore, should radiology take this? The answer is yes when you realize that for 3D printing radiology is essential to provide the correct acquisition data, maybe even tailored sequences especially designed for 3D printing of certain anatomy or pathology. Furthermore, still the segmentation of anatomy and pathology is not always trivial and requires knowledge and a trained eye to use the right exam to perform the segmentation on and to obtain a correct segmentation. However, 3D printing is often not yet covered in reimbursements and the clinical or financial gain is not to be found in radiology but more in the requesting specialisms such as surgery and trauma. Especially this factor makes the decision to invest in this new technology a difficult one.

At my hospital, we established a 3DLab in joint effort between radiology and the oral and maxillofacial surgery. Together we are working on improving 3D printing and driving the technology forward into a variety of application areas.

EuSoMII is the designated organization to embrace this development and to explore its application in radiology. So, if you're interested in this topic don't hesitate to contact us. We will be happy to advice you on your local 3D hospital applications.

From left to right: Joep Kraeima, MSc. Technical Physician and PhD candidate; Peter van Ooijen, Associate Prof. Medical Imaging Informatics (EuSoMII board member); Max Witjes, Associate Prof. Head & Neck surgical oncologist. Founders and coordinators of the 3DLab of the University Medical Center Groningen, Groningen, the Netherlands.

SIIM Global Ambassador Program

SIIM SOCIETY FOR IMAGING INFORMATICS IN MEDICINE
Innovating Imaging Informatics

As part of SIIM Global Outreach Committee, with a mission of advancing Imaging Informatics throughout the developing world, we are joining forces with RAD-AID International to create the SIIM Global Ambassador program. This program will supply grants for SIIM members with strong creative thinking and excellent communication skills to support travel with an interdisciplinary RAD-AID team to help underserved and developing regions of the world.

For this 2017 pilot program, we have chosen two countries: Laos and Nicaragua, where RAD-AID has recently installed PACS. Prior to travel, SIIM Global Ambassadors will work with RAD-AID informatics experts to plan interventions tailored to these unique environments, including troubleshooting, system configuration, upgrades, maintenance, and end-user training. SIIM is looking to send one SIIM Global Ambassador to each of the two countries, and we are targeting one of the trips to be completed before end of May 2017.

SIIM Global Ambassador Selection Criteria
Active SIIM Member for at least 2 years
Has attended at least 1 SIIM Annual Meeting (2 preferred)
Experience with (or willingness to use) social media
CIIP Eligibility (certification preferred)
Expectations from SIIM Global Ambassador
Fulfill all RAD-AID requests and expectations
Participation in RAD-AID informatics group calls leading up to and following travel
Active on Social Media during the trip; posting 1-3 times per week
SIIM blog posts
One pre-trip
One post trip
Annual meeting attendance required following Ambassador travel
Short video for SIIM marketing promotion
Ideally give a presentation on experience

Travel Details
SIIM Global Ambassador will be required to sign RAD-AID's Participant Agreement, which will act to advise the participant on safety measures. The SIIM Global Ambassador on a RAD-AID team will receive regular preparation and pre-trip guidance from RAD-AID program leaders.

For safety, RAD-AID's team leaders continuously monitor reports from US embassies and State Department, and have a 24-hour travel agent coverage that can help change/remedy any travel difficulties that may arise.
Application
Please make sure to review the Selection Criteria, RAD-AID Travel policy and our Expectations from the SIIM Global Ambassador before applying. Due date: March 3, 2017.
Your application will be reviewed jointly by RAD-AID and SIIM and you will be contacted within 4 weeks from submitting the application, should you be selected. After being confirmed, you will be working closely with the RAD-AID Program Leader on all further details to ensure a safe and successful trip.Apply Now
For questions, please contact Anna Zawacki (azawacki@siim.org; 703-723-0432 x310) at the SIIM Office.

Pittsburgh, PA • June 1-June 3, 2017 • David L. Lawrence Convention Center

SIIM 2017 ANNUAL MEETING
BRIDGING THE TRANSFORMATION TO A NEW ERA IN MEDICINE

European Congress of Radiology

ECR 2017

VIENNA
MARCH 1–5

THE FLOWER GARDENS
of RADIOLOGY

the annual meeting of

ESR
EUROPEAN SOCIETY
OF **RADIOLOGY**

Medical Imaging Informatics @ ECR2017

Nadya Pyatigorskaya, France
Angel Alberich Bayarri, Spain

The field of Imaging Informatics is becoming a highly relevant topic not only for radiology research but also for clinical application, as it is stated in ECR 2017 program, where a high number of contributions related to this topic will be presented. It is the visible part of the important paradigm shift that is driving radiology towards a Precision Medicine speciality, since images are, essentially, data that can be structured, processed, analysed and managed to improve workflows in most clinical scenarios.

The session on Machine Learning in Imaging Interpretation will take place on Wednesday at 14:00 at room E1. The field of Artificial Intelligence (AI) applied to radiology is one of the most relevant topics of current research in medical imaging. Both seen as friend or a foe, the application of machine learning together with the expertise and knowledge of radiologists will lead to new applications like the ones highlighted in the session. B. Szilveszter will present CAD-RADS in coronary CTA, showing these both faces "man vs. machine". Why not man + machine? It will be one of the topics under discussion.

K.S. Mader will present their study on big image analytics applied to imaging biobanks, showing the results from the application to a osteoporosis radiomics study. Osteoporosis is one of the main disorders that can be directly assessed by smart-data analysis, since there is still a gap between the current stratification based on densitometry and the real clinical endpoint of the disease: the bone fracture.

T.J. Re will then present a work with a high number of recruited patients (1000000 CT scans) that were used to extract bone density calculations for osteoporosis screening. A method for the automated vertebrae localisation in arbitrary fielf-of-view spine CT scans using decision forests will be presented by A. Jiménez-Pastor.

Within this session, J.J.M. van Griethuysen will present their work on a really challenging topic like the fully automated segmentation of rectal cardinomas using supervised learning techniques with expert-reader input. Segmentation of rectal carcinomas is one of the most difficult tasks of automated segmentation methods, specially because of the difficulty to clearly identify the tumor margins in diffuse lesions.

The session on Image Quantification, Texture Analysis and Imaging Biomarkers will take place on Thursday at 10:30 AM at room M3. One of the most relevant topics within the congress is the increase growth in the use of dual-energy CT, and this session will be opened by a presentation of B. Hoppel on texture-based analysis of dual-energy CT and monochromatic imaging for quantification of steatosis hepatitis and the correlation of results with pathology. It is expected that the conclusions may have an important clinical impact since this is one of the most challenging tasks in CT scans where there exists co-existence of fat and iron within the liver and an accurate quantification of fat and iron would be crucial.

I. Mayorga-Ruiz will present a fully automated method for the segmentation of lung emphysema from multidetector CT images. These automated approaches are very relevant in order to minimize human interaction in post-processing and ease the integration of biomarkers in clinical trials in order to increase reproducibility.

In this session we will have the opportunity to listen to Prof. Dr. D. Le Bihan, the creator of diffusion weighted MR methodology speaking about a new integrated biomarker for IVIM/diffusion MR, showing the results of a study about clinical feasibility.

The session on Radioprotection and Dose Management will take place on Friday at 10.30 AM at room M3. This topic continue gaining importance in the radiological daily practice and technology development offers new solutions for optimization of the dose management.

E. Fraile will present his method of reducing the overdose in conventional x-ray in pediatric patients. Using a centralized electronic system, the alerts of overdose were recorded and the causes analyzed. They were mainly related to collimation and radiographer technique applied. The implementation of an educational program allowed to reduce the overdose.

X. Xin will demonstrate that iterative model reconstruction algorithm can help 50% radiation dose reduction without compromising image quality, and can be used in patients after treatment of malignant tumors while acquiring chest and abdomen CT for response assessment.

The work of M.M. Kolb aimed to determine the effect of a new denoising technique on image quality and diagnostic accuracy for low-dose CT in patients with suspected appendicitis. He found that QuantaStream Denoising of lower dose abdominal CTs (25% of original exposition) maintains high diagnostics image quality and diagnostic accuracy in patients with suspected acute appendicitis and associated complications.

J. Lee evaluated the 2-year cumulative effective radiation dose and the cumulative organ dose on regular follow-up CT scans in patients with breast cancer and tried to establish a personalized low-dose CT protocol. He observed that while the mean patient's exposure was 96mSv for 2 years for a mean of 8 scans each, the highest cumulative CT radiation dose was delivered in patient with lymph node metastasis and in HER-2 positive patients.

He concludes to the necessity of personalized protocols and iterative reconstruction to reduce the exposure. This talk emphasizes the important place of personalized medicine in dose reduction.

The last but not the least scientific session of the "Computer Application" program on Sunday will talk about another subject on recent developments in imaging informatics, about the clinical decision support and about structured reporting. This session will take place at 10.30 AM at room M4.

The clinical decision support (CDS) is a major topic in the contemporary radiology, in the center of multiple national and international initiatives and start-ups. In this context the structured reporting with standardized language and codification gains an additional importance. For better homogenization of the reports, the common RSNA-ESR initiative is working on creating the library of standardized radiology reports.

The first presentation of the session by A. Goehler will focus on the integration of the CDS in the emergency department, emphasizing the importance of the physician adherence to the CDS in order to have an impact on the clinical practice.

The talk of A. Viteri Jusue will describe the interest of developing a virtual learning environment for teaching to medical students such skill as prescribing imaging tests and making decisions based on their results.

F. Copolla will show the interest of dematerialization of inform consent in radiology on the basis of an Italian survey.
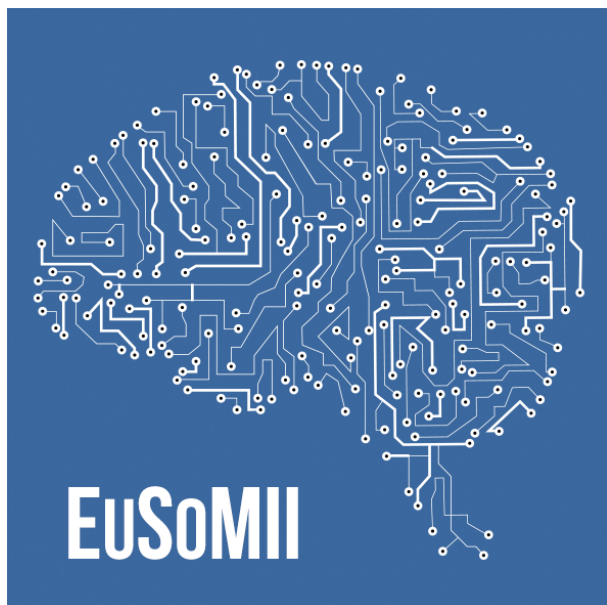
The presentation and clarity of a radiology report do not always meet the expectations of referring physicians. While the debate about the most appropriate form and standards of reports is still taking place, T. Heye aimed to assess the perception, preferences and expectations of clinicians of radiology reports in terms of style and content. He observed that regarding layout preferences, structured text and images rated higher in terms of readability, time savings and helpfulness in the communication with patients, as compared to tables and unstructured text. Two other studies that will be presented by M.E. Maros show that

structured reporting increases the adherence to reporting guidelines of both senior and junior radiologists and decreases reporting time.

The voice recognition dictation of radiology reports has become the mainstay of reporting in many institutions worldwide, in both unstructured but especially structured reports. R.E. Motyer will discuss limitations of dictation system with an audit that has found 17.72% of reports contained more than 1 error, with 1.85% containing 'significant' and 2.38% containing 'very significant' errors. Longer reports and reports on more complex imaging had higher error rates and this should be taken into account by the reporting radiologist.

After being produced the report should get to the clinician in the time laps that is related to the emergency of findings. P. Fraga suggests a software tool that allows warning clinicians about the preferred reading of those reports showing unexpected radiological findings, emergency and incidental findings that imply a change in clinical management of patients.

Beyond the report F. Rigiroli will discuss the interest of radiological counseling service aimed to meet the patient in order to get information about radiological exams and medical report, and to discuss diagnostic imaging issues. This type of service appears to be useful for the patient and can improve the relationship between the patient and the radiologist, who gains a new clinical role.

We hope that you will be able to attend the sessions and enrich the discussions on these topics that concerns the future of imaging informatics and more generally the future of radiology.

EuSoMII Annual Meeting 2016
Imaging Informatics in Oncology
October 6–7, 2016 I Valencia, ES
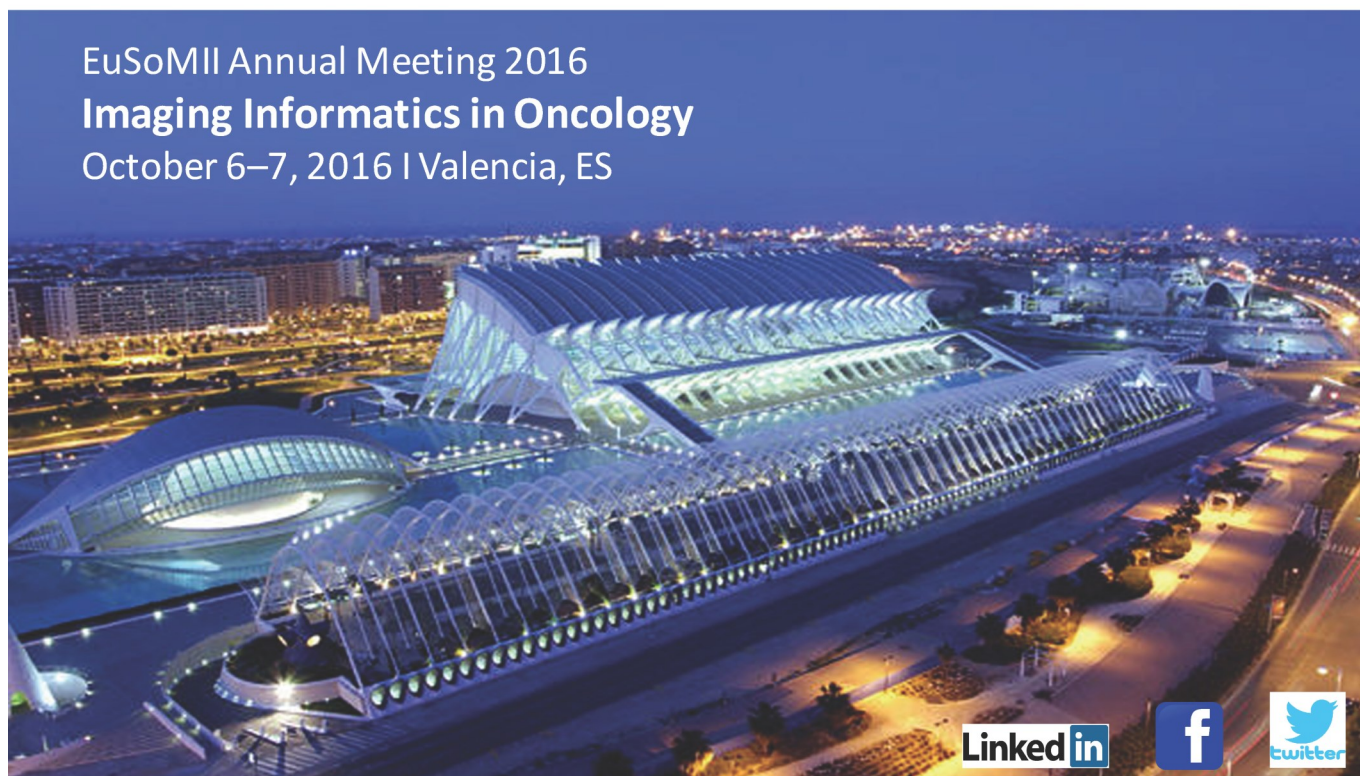
Automated Athletic Bone Age Determination for FIFA Grading System

Hamed Yousefi
School of Electrical and Computer Engineering, College of Engineering, University of Tehran, IRAN
Mansoor Fatehi,
Medical Imaging Informatics Research Center, Tehran, IRAN

Purpose

Complying fair play in U17 football matches is not limited to doping tests and ethical issues during the match but also includes age limits because over-aged players can cause sport injuries and may change the result of the match by stronger bodies and higher expertise. Although birth certificate is the major legal document to define chronological age of the players but unreliable birth certificates have resulted in medical investigations to assure compliance with age limits in U17 teams particularly in Asian and African countries [1][2]. According to physiological studies, bone age has the highest correlation with chronological age.

In order to avoid unnecessary x-ray exposure in healthy young athletes, MRI has replaced conventional wrist and hand x-ray in this particular group. FIFA has adopted a grading system based on closure of epiphyseal plates in distal radius.

Segmentation and 3D shape modeling of the epiphyseal plate has already been reported by our group. Dealing with the epiphyseal plate as a discrete 3D object and extracting quantitative features of this object has been considered a promising approach to understand bone age determination using MRI.

The purpose of this project was to explore correlations between quantitative features extracte facilitate development of a fully automated CAD system for MRI bone age determination.

Methods and Materials

Thirty football players of our national U17 team were examined using Siemens 1.5 Tesla scanner, Magnetom Avanto 18-channel. All players aged between 14 -18. The FIFA protocol results in 9 coronal slices of wrist.

Then the studies were graded by a radiologist according to FIFA scoring.
grade I: Completely unfused
grade II: Early fusion.
grade III: a Trabecular fusion of less than 50% of the radial cross-sectional area.
grade IV: a Trabecular fusion of more than 50% of the radial cross-sectional area.
grade V: Residual Physis, less than 5 mm on any one section.
grade VI: Completely fused

The image processing of the MR images followed these steps:
First, radius was segmented in all coronal slices automatically using a 3D level set method [2], then its growth plates was segmented [2]. Subsequently, the segmented growth plates were set together to build a 3D object [3].

Radius bone with its growth plate segmentation

The following features were extracted from the 3D object:
1) Thickness estimated by calculating the ratio of total volume to the surface
2) Volume density of growth plate
3) Mean of intensity
4) Variance of intensity
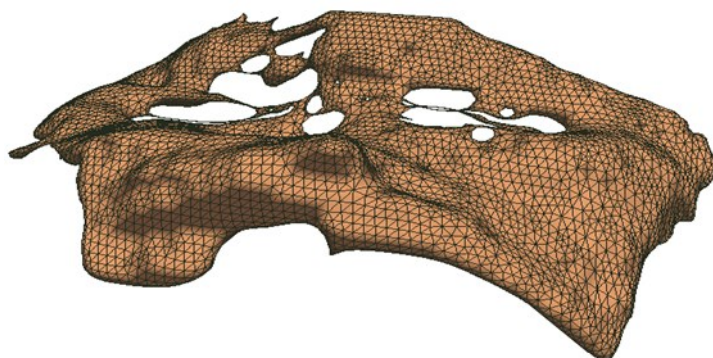
Magnified 3D object of growth plate

At the moment, the thickness of the coronal slices is the most important feature that FIFA uses for age estimation. In this article 3D volumetric features are used instead of 2D features.

For using this application the physician should create an account first. This application contains different segments recording Patient Information, Imaging Technique, Finding, Recommendation.

One of the important features of the application is variety of methods of delivery to the potential recipient. Since the content of the report is structured in nature, it can be formulated to various shapes and communicated using commonly available messaging tools and routes.

Privacy issue should be kept in mind using such systems to capture and communicate health information.

Also practical issues of syncing the contents of messages delivered by this application with official radiological information systems in the enterprise are critical.

Table 1. 3D feature extracted related to grades of FIFA
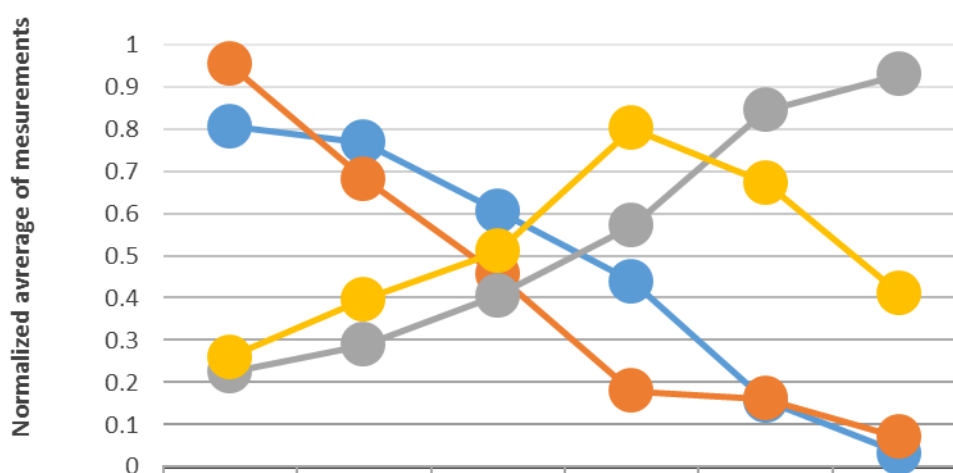
	1	2	3	4	5	6
Thicness	0.8051	0.7678	0.6063	0.4382	0.1568	0.0316
Volume Density	0.9529	0.6812	0.4553	0.1788	0.1612	0.0706
Mean of Intensity	0.2249	0.2892	0.4056	0.5703	0.8434	0.9285
Variance of Intensity	0.2598	0.3963	0.5102	0.8016	0.6719	0.4094

Standard Grades of FIFA

Free online medical knowledge exchange portal - DICOM Library

DICOM Library is free online medical images, signals or video files sharing and anonymizing service for educational and scientific purposes. The main idea of this library was to create and develop brand new innovative tool for medical specialists to analyze and manipulate medical data and share anonymized studies among colleagues or even get medical professionals' second opinion from all over the world. Unique medical knowledge exchange portal was launched by SOFTNETA company in 2011.

DICOM Library is intended for medical professionals, such as radiologists, cardiologists, physicians and other specialists, as well as for medical professors and students, who are working with studies in DICOM (Digital Imaging and Communications in Medicine) format, i. e. DICOM files, DICOM images, signals, videos and similar data. Users have a possibility to share anonymized medical DICOM images online with their colleagues quickly.

DICOM Library allows the users to upload, view and share anonymized DICOM files easily, as well as to delete them from the library. The users may review uploaded study through the web based HTML5 zero-footprint Dicom viewer – MedDream. MedDream DICOM Viewer is FDA cleared for diagnostic use and certified medical device that can be used for review purposes or even primary diagnosis. MedDream DICOM Viewer has a rich tool set, which includes regular tools such as zoom, pan, windowing, magnifier, measuring and advanced tools for radiology, cardiology, ophthalmology and other fields. MedDream ensures prompt and reliable way to view and analyze medical images, signals and video files on various devices: computers, smart phones, tablets, etc.

DICOM Library

Anonymize, Share, View DICOM files ONLINE

POWERED BY: Softneta

DICOM VIEWER: medDream

FUNDED BY:

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About Viewer

DICOM Library is a free online medical DICOM image or video file sharing service for educational and scientific purposes.

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by using Dicom Library

ZIP or DCM file

STEP **1** UPLOAD

Anonymization

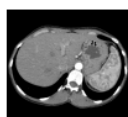STEP **2** VIEW & MANAGE
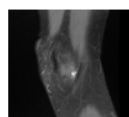
Web link

STEP **3** SHARE

Select DICOM file

DICOM files will be **ANONYMIZED** automatically before upload

By clicking Select DICOM file button You agree with our **Terms of Service** and the **Privacy Policy**

DICOM Samples

Modality:CT
Size:31.4 MB
Count:361
View
Manage

Modality:MR
Size:31.77 MB
Count:135
View
Manage

Modality:OT
Size:0.256 MB
Count:1
View
Manage

What can you upload?
You can upload DICOM file or files packed as zip. Zip can contain DICOM files of studies, series and others.

How upload works?
Firstly test if it DICOM file or it will be skipped. Secondly try anonymize and then upload file to server. Same goes for zip file: try to extract and read file by file, test for DICOM format or skip, anonymize and upload. All extracting and anonymization is made on your browser.

Share?
You can share uploaded files via social networks: facebook, twitter, send by e-mail and embed DICOM viewer to forum.

Anonymization?
At this point - deletes information about patient and attributes to identify a person in each DICOM file. Anonymization is done in your browser.
Do not upload files with information written on image!
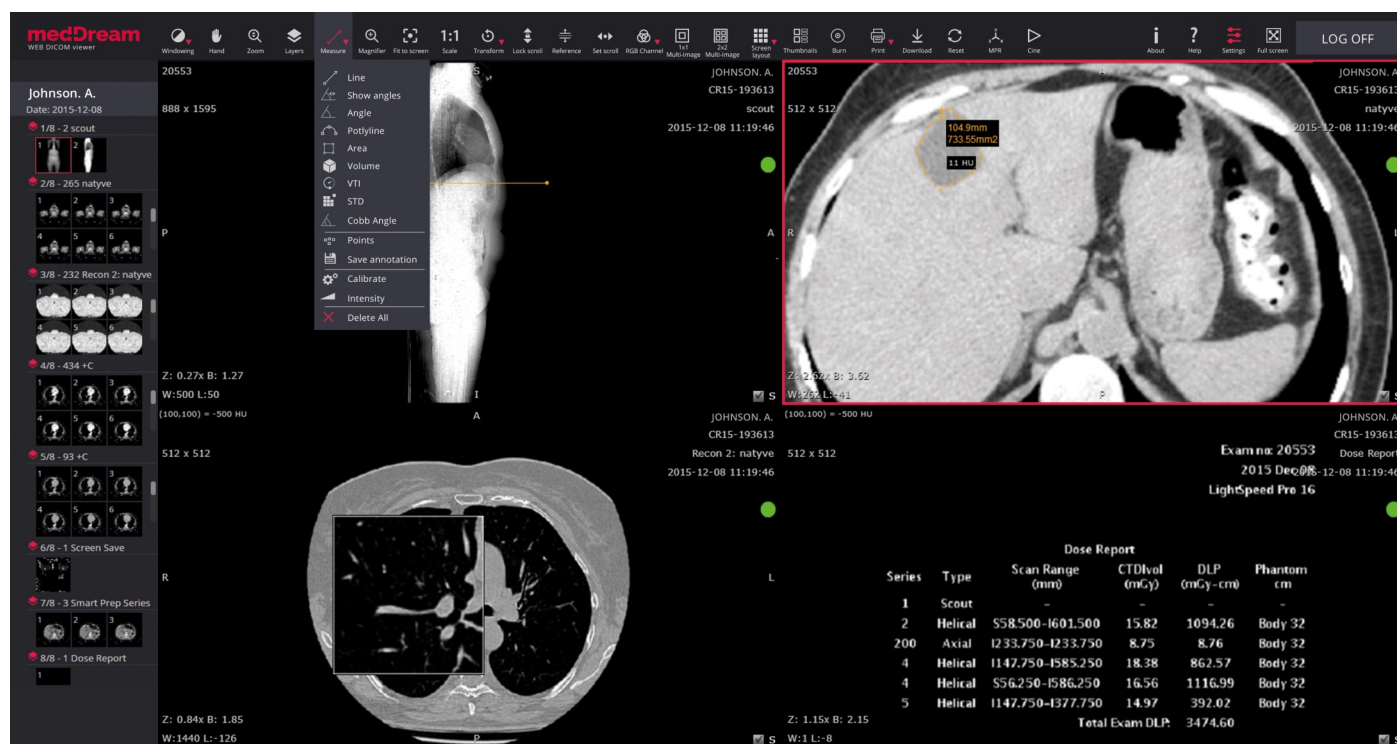
All DICOM files are anonymized before they are uploaded into the library, therefore, no personal information about the patient or the doctor is revealed. Moreover, the users can use the provided DICOM Library's links of the anonymized DICOM studies, share them with other colleagues for asking an advice or second opinion for diagnosis or simply download them. What is more, the user may share the link with the study in forums, social networks or just send them by e-mail. This possibility creates prompt online communication between medical professionals. Also, as library, this portal contains main DICOM data lists, as: Transfer Syntaxes, SOPs (A Service-Object Pair Class), Modalities, Tags and Space storage calculator.

DICOM Library users worldwide

1   92,148
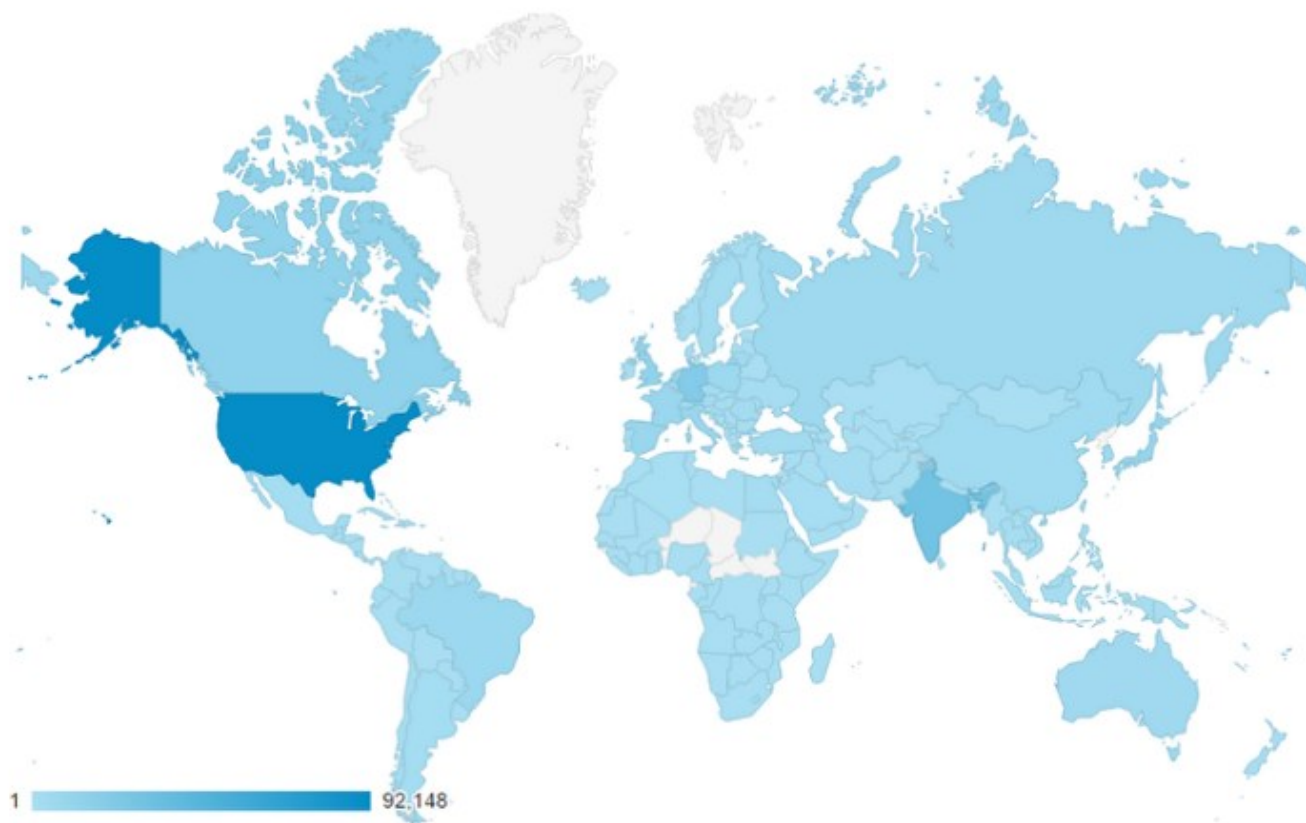
DICOM Library uniqueness and relevance caused its popularity worldwide. The number of studies shared by using this portal has reached over 321 k studies throughout 6-year project cycle with about 230 k unique users from 204 countries. Even more than 63 k of all users (27%) are from United States. Other top countries, where DICOM Library is used the most are: India, Germany, Canada, United Kingdom, Japan, Netherlands, Russia, Italy and France. During the past 5-year period, usage of the service increased more than 9,3 times and number of new users increased 8,5 times.

As DICOM Library is very popular, there are development and extension plans made for the nearest future: creating Database of Medical Images, implementing the classification of medical images via illness code, diagnosis, study type, part of a body etc., developing doctor to doctor collaboration and patient to doctor second opinion features.

This project contributes to better studies' understanding and communication between medical specialists in medical, educational and scientific areas. Please visit DICOM Library website: http://www.dicomlibrary.com/

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Page 19

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Top Patients Last 1500 Days CT Studies

ID	Date of Birth	Studies
224985490	8/3/1962	19
577156114	10/13/1968	18
695071638	11/7/1987	17
760008465	12/29/1972	16
760123646	10/9/1930	15
273460106	10/1/1953	15
230472406	7/21/1978	15
051322306	4/4/1940	15

Top Patients Last 1500 Days XA Studies

ID	Date of Birth	Studies
051322306	4/4/1940	6
224134896	7/29/1963	5
227305139	4/8/1929	5
MRN12345	9/6/1953	4
760136703	8/7/1951	4
224382073	11/7/1935	4
760152280	3/1/1933	4
730064565	12/11/1959	4

CTDIvol Max DLP Air Kerma Fluoro Time

Dose Summary

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- Multi-modality, vendor-neutral software minimizes installation time and costs

- Customized e-mail alerts help improve control and implement the ALARA* principle

*ALARA (as low as reasonably achievable)
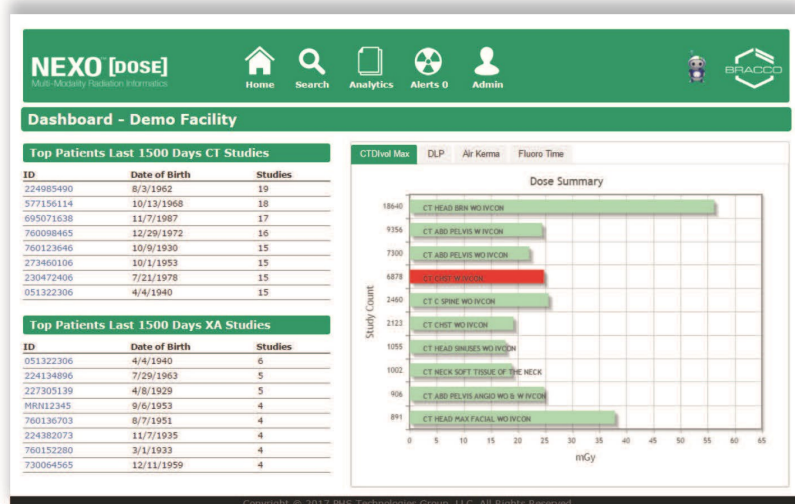
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EuSoMII members can refer to Ms Sara Carleschi (sara.carleschi@fclassevents.com), staff member of First Class Agency.

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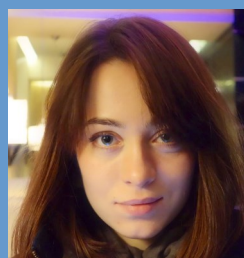

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EuSoMII is delighted to have
Ilya Pyatnitskiy &
Ekaterina Klimova
from the
Radiology Research and Practical Centre in Moscow who facilitate the activities of society in a broad perspective.

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The vision of the Society is the integration of information and communication technology with diagnostic and therapeutic medical imaging.
• The mission is to foster the transition from research to clinical application and education in the following fields:
• Intelligent infrastructures and processes for image and knowledge management in medical diagnosis and therapy
• Clinical computer application of medical images
• Seamless information sharing for healthcare delivery and for clinical research purposes
• Standards and quality assurance methods and tools.

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