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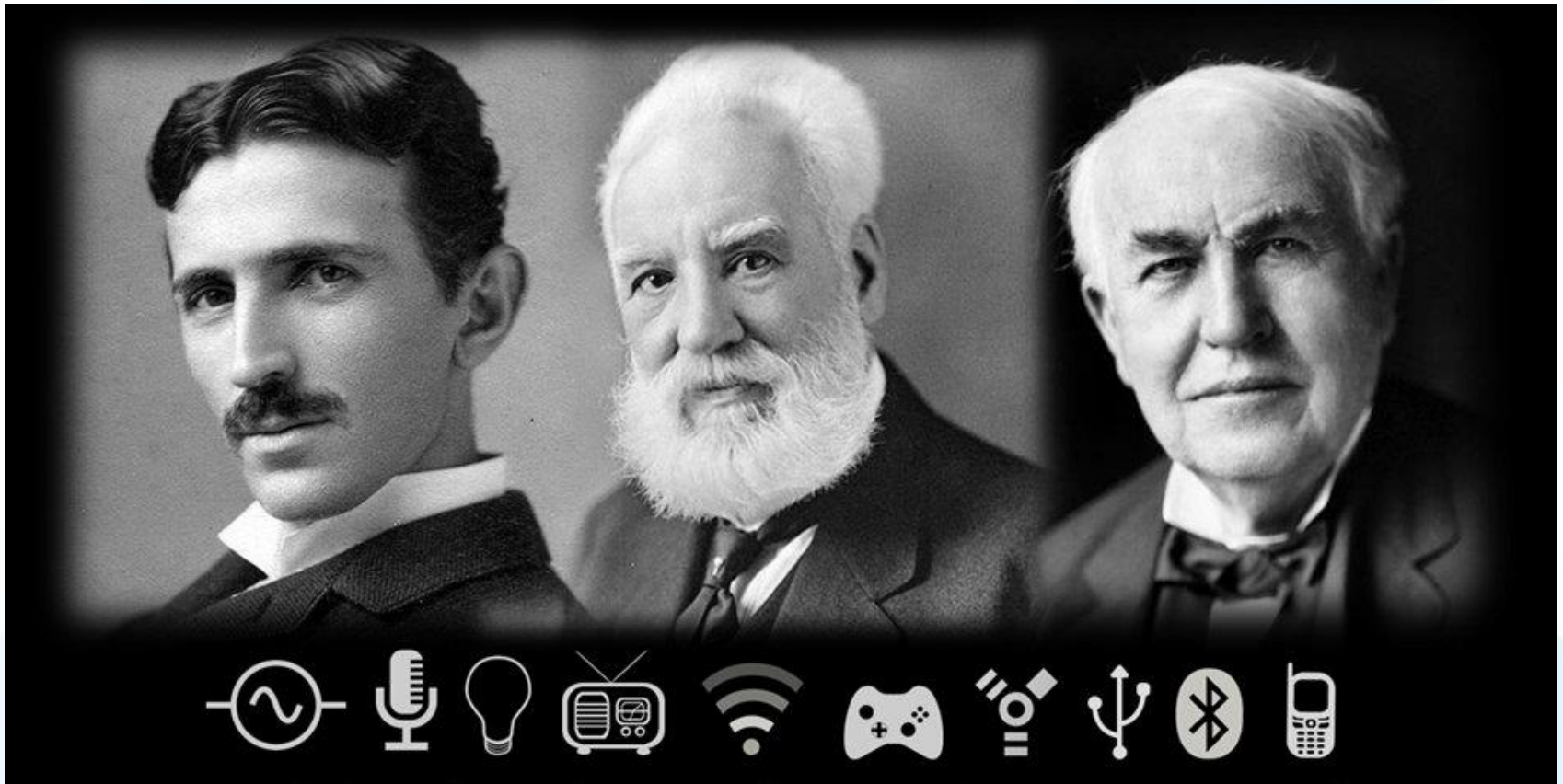
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- World's largest technical membership association with more than 430,000 members in over 160 countries
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- Four Core areas of activity
 - Membership organization
 - Conferences organizer
 - Standards developer
 - Publisher of journals, conferences, standards, ebooks and elearning
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- Backfile to 1988, select legacy data back to 1872
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14 of the top 15 journals in Telecommunications

3 of the top 5 journals in Computer Science, Hardware & Architecture

3 of the top 5 journals in Computer Science, Cybernetics

3 of the top 5 journals in Automation & Control Systems

3 of the top 5 journals in Artificial Intelligence

2 of the top 5 journals in Imaging Science & Photographic Technology

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More info: www.ieee.org/citations

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- # **1** in Theory and Methods
- # **1** in Telecommunications
- # **2** in Electrical Engineering
- # **3** in Aerospace Engineering



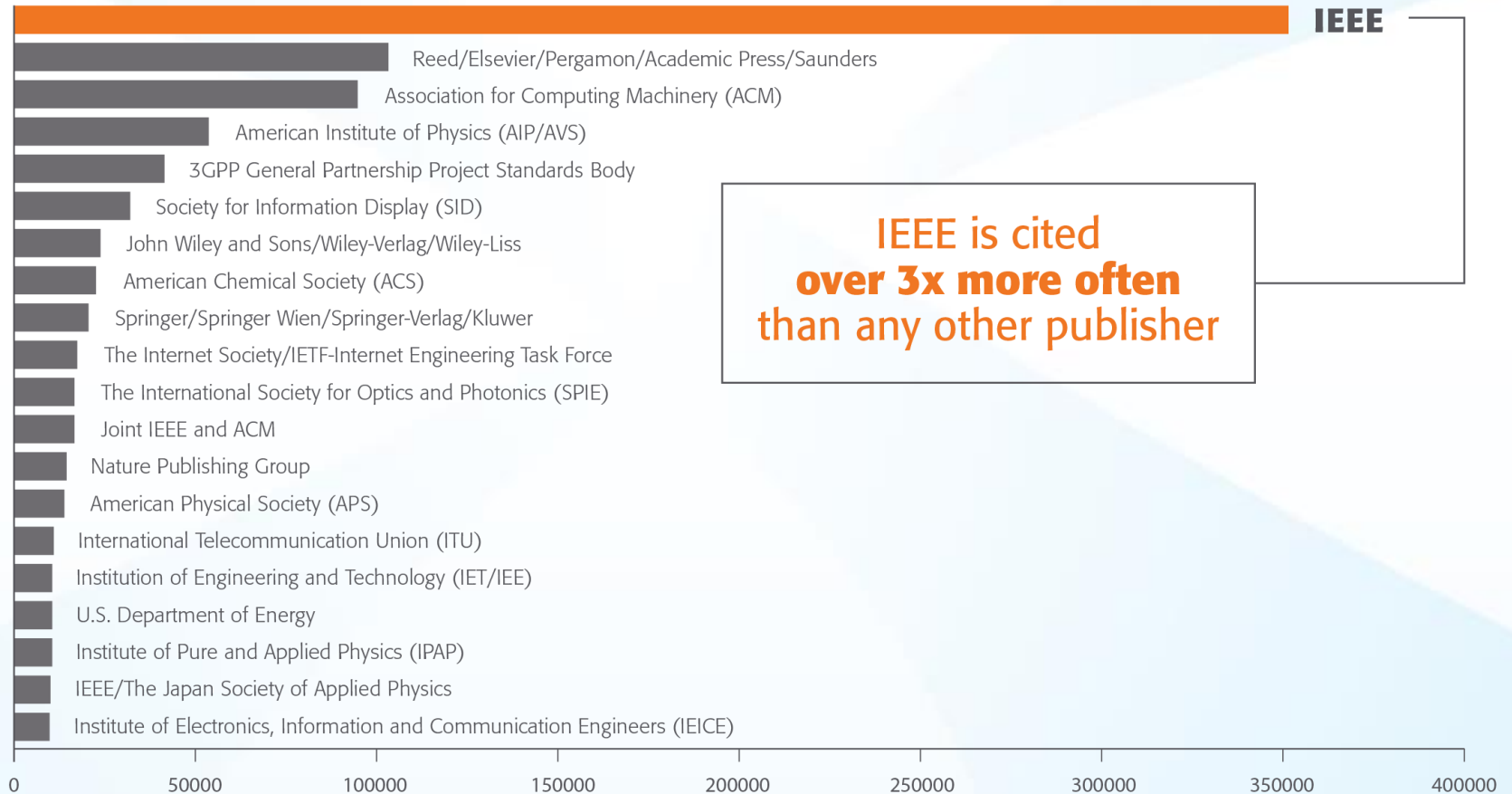
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IEEE and Patents

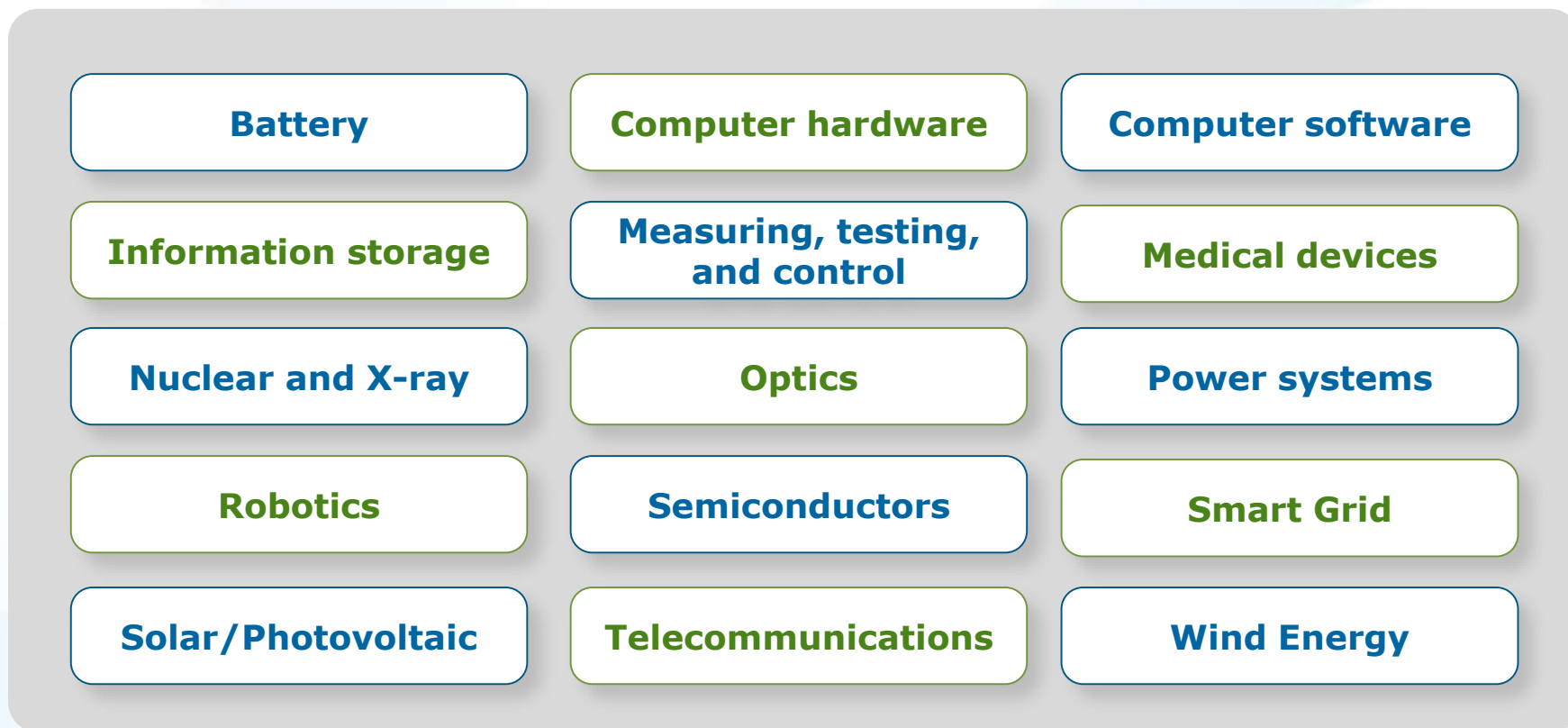
IEEE Leads US Patent Citations

Top 20 Publishers Referenced Most Frequently by Top 40 Patenting Organizations



Source: 1790 Analytics LLC 2015. Based on number of references to papers/standards/conferences from 1997-2014

Technology areas where patents cite IEEE most



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IEEE Systems, Man, and Cybernetics Society

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IEEE Ultrasonics, Ferroelectrics, and Frequency Control Society

IEEE Vehicular Technology Society

IEEE covers all areas of technology

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MACHINE LEARNING **BIG DATA**

OPTICS RENEWABLE ENERGY

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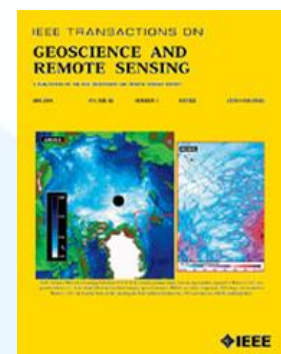
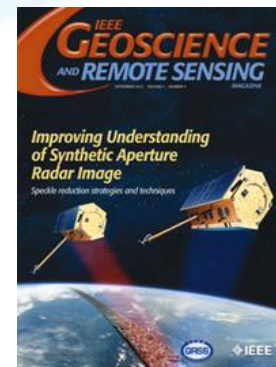
Life Sciences

- At least **eight IEEE publications** are dedicated in whole or in part to technology related to Life Sciences.
- Plus, there are more than 90 annual conferences, 20 periodicals and 20 IEEE standards that cover **medical device communications**.
- In IEEE *Xplore*, you'll also find coverage of therapeutic devices used in rehabilitation processes, such as physical therapy and devices used to restore movement and function.
- Examples of IEEE publications:
 - IEEE Pulse
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 - IEEE Reviews on Biomedical Engineering
 - IEEE Trans. on Neural Systems and Rehabilitation Engineering
 - IEEE Trans. on Information Technology in Biomedicine
 - IEEE Trans. on Medical Imaging
 - IEEE/ACM Trans. on Computational Biology and Bioinformatics
 - IEEE Trans. on Biomedical Circuits and Systems
 - IEEE Trans. on NanoBioscience
 - IEEE Trans. on Autonomous Mental Development.



Geoscience and related fields

- IEEE's geoscience and remote sensing publications cover the fusion of engineering and **geoscientific fields including geophysics, geology, hydrology, meteorology, etc.**
- In IEEE *Xplore*, you'll also find information relevant to **natural resources engineering** and **mineral resources engineering**, including extensive coverage of technologies related to **oil and gas exploration, drilling operations, offshore oil rigs and mining.**
- Examples of IEEE publications:
 - **IEEE Trans. on Geoscience & Remote Sensing**
 - **IEEE Geoscience & Remote Sensing Magazine**
 - **IEEE Geoscience & Remote Sensing Letters**
 - **IEEE International Symposium Geoscience and Remote Sensing (IGARSS)**
 - **IEEE Petroleum and Chemical Industry Technical Conference (PCIC)**



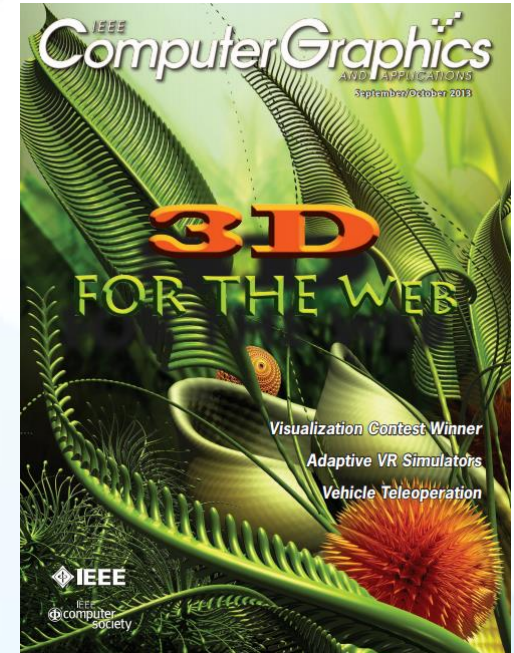
Manufacturing Engineering

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 - IEEE Transactions on Semiconductor Manufacturing
 - IEEE Transactions on Automation Science and Engineering
 - IEEE Robotics & Automation Magazine
 - IEEE International Symposium on Assembly and Manufacturing
 - International Conference on Digital Manufacturing and Automation
 - e-Manufacturing & Design Collaboration Symposium Electronics Manufacturing Technology Symposium
 - International Conference on System Science, Engineering Design and Manufacturing Informatization



Digital Art & Technology

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- Examples of IEEE *Xplore* publications:
 - IEEE Computer Graphics
 - IEEE Trans. On Visualization & Computer Graphics
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 - International Conference on Computer Graphics, Imaging & Visualization
 - International Conference on Image & Graphics



Game Design

- IEEE *Xplore* covers the design of **video games, mathematical games, human-computer interactions in games, and games involving physical objects.**
- Topics include **game production, computational intelligence, artificial intelligence, simulations,** and more
- Examples of IEEE *Xplore* publications:
 - IEEE Trans. On Computational Intelligence and AI in Games
 - Symposium on Computational Intelligence in Games
 - International Conference on Computer Games
 - International Workshop on Digital Game and Intelligent Toy Enhanced Learning
 - International Symposium on Haptic, Audio, Visual Environments and Games

Computational Intelligence in Games 2014
August 26 – 29, Park Inn Hotel, Dortmund, Germany

www.cig2014.de April 1, 2014 IEEE Explore

Mark Riedl
Georgia Institute of Technology

Jochen Pökelz
Blue Byte GmbH

Rilla Khaleel
University of Malta

Thorsten Quandt
Witten-Herbert Universität Münster

Computational & artificial intelligence in:
• Video games
• Board and card games
• Economic or mathematical games
• Serious games
• Augmented and mixed-reality games
• Games for mobile platforms

Calls for Special Sessions (March 1) and Tutorials (April 1) OPEN!

Learning in games
• Procedural content generation
• Player/opponent modeling in games
• Player affective modeling
• Player satisfaction and experience in games
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• Intelligent interactive narrative
• Theoretical or experimental analysis of AI techniques for games
• Non-player characters in games
• Comparative studies and game-based benchmarking
• Applications of game theory

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IEEE Computational Intelligence Society

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Healthcare: telemedicine, electronic medical records, patient-specific healthcare, cloud computing in the medical field, patient monitoring systems, informatics, and more

Emerging Technologies for Patient-Specific Healthcare

I. INTRODUCTION

PATIENT-SPECIFIC healthcare is a research field that has recently garnered much more attention due to the benefits of better services provided to patients and a reduction of healthcare costs. A series of emerging technologies [1] aim to emphasize the provision of personalized healthcare services to patients [2]–[5]. These include the following.

- 1) Pattern recognition methods for signal pattern classification toward the prediction and diagnosis of diseases.
- 2) Body sensor networks.
- 3) Algorithms for the analysis of patient-specific physiological signals.
- 4) Ontologies and context-based electronic health records (EHRs).
- 5) Methodologies for the integration of clinical, patient, and

intranuclear spike activity recorded from Parkinson's disease patients.

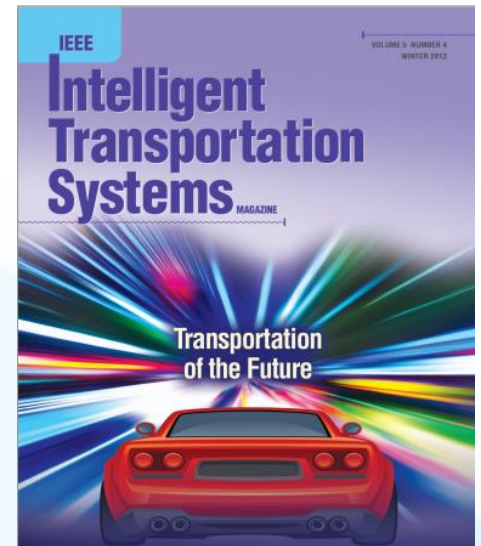
A new Neural Sensing Healthcare System for 3D Vision Technology, NeuroGlasses, is presented in [7]. NeuroGlasses is a nonintrusive, wearable physiological signal monitoring system to facilitate health analysis and diagnosis of 3-D video watchers. The NeuroGlasses system acquires health-related signals by physiological sensors and provides feedback of health-related features. The system employs signal-specific reconstruction and features extraction to compensate the distortion of signals caused by the variation of sensor placement. Through an on-campus pilot study, the experimental results show that NeuroGlasses system can effectively provide physiological information.

In [8], the authors explore how the rhythmogram can be used

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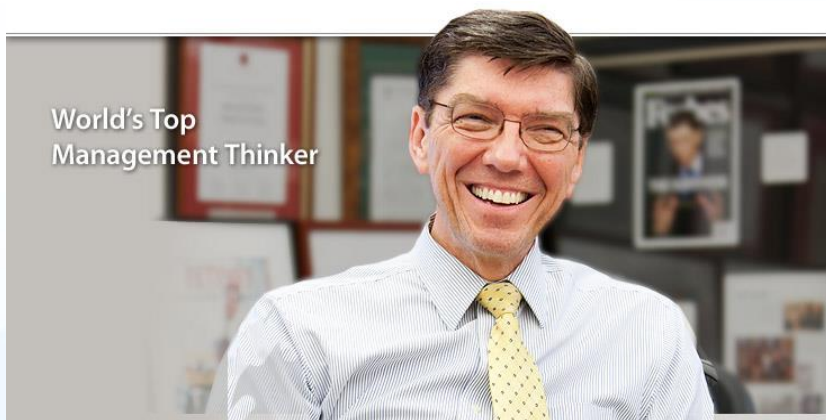
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 - IEEE Trans. on Intelligent Transportation Systems
 - IEEE Intelligent Transportation Systems Magazine
 - IEEE Trans. on Automation Science and Engineering
 - IEEE International Conference on Automation and Logistics



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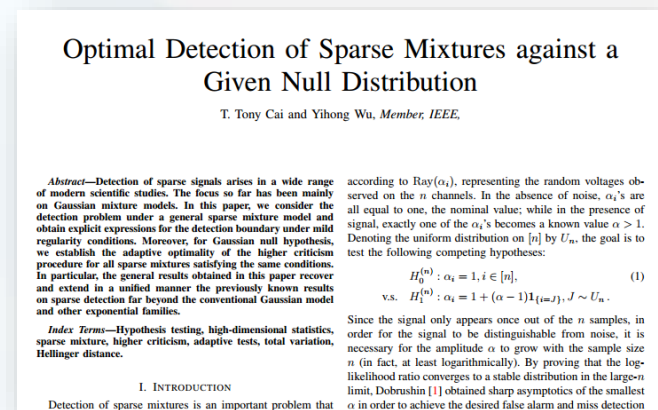
Read articles by leaders in the field:



Prof. Clayton Christensen
Harvard Business School

"Innovator's Dilemma"

<http://www.claytonchristensen.com/>



Prof. Tony Cai
The Wharton School of the University of Pennsylvania

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Criminal Justice: crime scene investigation technologies, cybercrime, crime statistics, and more

Dimensional Analysis of a Crime Scene from a Single Image

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Crime Forecasting Using Data Mining Techniques

Crime is classified by time. A better approach to correspond to social changes is to develop a model that is developed in combination with a data mining approach to analyze crime-related events. This paper presents the data, and the results of the data mining classification model. The results show that the data mining classification model can increase or decrease the crime rate. The result of our study is a reliable crime prediction model.

Cybercrime regulation at a cross-road: State and transnational laws versus global laws

The proliferation of cybercrime necessitates all internet-connected states to be involved in cybercrime regulation. Although it has been stated that the internet per se and cyberspace in general are by its very nature ungovernable, many states have taken territorial control of the internet although the effectiveness of such control in cross-border crime commission may be questioned. The internet may very well become ungovernable if a nation-state takes a unilateral decision on which conduct constitutes permissible online conduct or endeavours to superimpose laws on other nation-states. It is therefore suggested that under the auspices of the United Nations and within an international law context the following issues should be addressed: conceptualizing the term "cybercrime" in establishing for example whether it includes a cyber-attack, determining which online conduct is permissible to ensure peace and security and initiating negotiations towards a Cybercrime Treaty.

This paper at
Written by: C

This paper appeared on
11-11 Dec. 2011

This paper appears in: [Information Society \(i-Society\)](#), 2012 International Conference on, Issue Date: 25-28 June 2012, Written by: Watney, Murdoch

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Liberal Arts: digital humanities, use of image processing in art conservation, music classification, and more

2012 6th IEEE International Conference on Digital Ecosystems and Technologies (DEST)

TRACK E: DIGITAL HUMANITIES

Track co-Chairs

- **Tobias Blanke**, *Kings College, UK*
- **Stuart Dunn**, *King's College London, UK*

The digital humanities form a bridge between the traditional practices of scholarship and the opportunities afforded by advances in technology, enabling researchers to reconsider old problems in new ways, and providing the methods, tools and frameworks to support them in developing new modes of enquiry. On the one hand, the humanities are faced with ever greater volumes of complex data and digital resources, for example from the increasing mass digitisation of historical records.

On the other hand, research in the humanities is moving away from the model of individual scholars to one in which international and inter-disciplinary teams of researchers collaborate actively within a diverse ecosystem of digital resources, tools, and services, not forgetting of course the users themselves – the rapid evolution of Web technologies continues to privilege the human as a key agent, both as provider and consumer of content, and this in turn is investing humanities scholarship

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Entertainment: computer graphics, animation, 3D, digital motion pictures, laser projectors, and more

Bringing Physical Characters to Life

Akhil J. Madhani
Walt Disney Imagineering R&D

Abstract

At Disney, we are s
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entertainment robot
Disney in attraction

In this talk, I hope
Disney. In particul
distilled from Disne

As examples of cha
I discuss two newer
the Disney theme
developed in conj
and has made app

Ray Tracing for the Movie 'Cars'

Per H. Christensen* Julian Fong David M. Laur Dana Batali

Pixar Animation Studios



ABSTRACT

This paper describes how we extended Pixar's RenderMan renderer with ray tracing abilities. In order to ray trace highly complex scenes we use multiresolution geometry and texture caches, and use ray differentials to determine the appropriate resolution. With this method we are able to efficiently ray trace scenes with much more geometry and texture data than there is main memory. Movie-quality rendering of scenes of such complexity had only previously been possible with pure scanline rendering algorithms. Adding ray

tracing to the render pipeline allows additional effects such as a

texture cache keeps recently accessed texture tiles ready for fast access. This combination of ray differentials and caching makes ray tracing of very complex scenes feasible. This paper first gives a more detailed motivation for the use of ray tracing in 'Cars', and lists the harsh rendering requirements in the movie industry. It then gives an overview of how the REYES algorithm deals with complex scenes and goes on to explain our work on efficient ray tracing of equally complex scenes. An explanation of our hybrid rendering approach, combining REYES with ray tracing, follows. Finally we measure the efficiency of our method on a



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Wearable Computing

Editor: Bernt Schiele ■ MPI Informatics ■ schiele@mpi-inf.mpg.de

Smart Textiles: From Niche to Mainstream

*Jingyuan Cheng, Paul Lukowicz, Niels Henze, Albrecht Schmidt,
Oliver Amft, Giovanni A. Salvatore, and Gerhard Tröster*

As with many new technologies, smart clothing and textile electronics currently suffer from the chicken-and-egg problem—that is, for the devices to be widely deployed, the price must come down, but for the price to come down, the devices must be mass-produced (and widely deployed).

between the various people creating the fabric, garments, electronics platforms, and apps (see Figure 1).

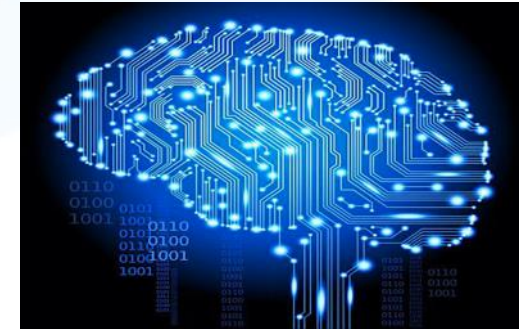
The solution to the chicken-and-egg problem must incorporate all steps—from garment production through to wearable sensing apps. With appropriate abstraction, the process shown in

process should essentially remain a series of cutting and sewing steps, possibly including the integration of different materials. Designers could apply this process to the sensing layer, as well, to align the sensors with the garment and with targeted application domains. However, three requireme

New IEEE Journals Planned for 2017

In 2017, IEEE will introduce six new journals that will be available for subscription:

- *IEEE **Communications Standards** Magazine*
- *IEEE Journal of **Electromagnetics, RF and Microwaves in Medicine and Biology***
- *IEEE Transactions on **Emerging Topics in Computational Intelligence***
- *IEEE Transactions on **Green Communications and Networking***
- *IEEE Transactions on **Radiation and Plasma Medical Sciences***
- *IEEE Journal of **Radio Frequency Identification***



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- *IEEE Transactions on **Intelligent Vehicles***
- *IEEE Journal on **Multiscale and Multiphysics Computational Techniques***
- *IEEE **Robotics and Automation Letters***
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- *IEEE Trans. on **Transportation Electrification***
- *IEEE Trans. on **Cognitive Communications and Networking***
- *IEEE Trans. on **Computational Imaging***
- *IEEE Trans. on **Molecular, Biological, and Multi-Scale Communications***
- *IEEE Trans. on **Multi-Scale Computing Systems***
- *IEEE Trans. on **Signal and Information Processing over Networks***
- *IEEE **Systems, Man, and Cybernetics** Magazine*

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A sampling of some of the new conferences added in 2015

- **Big Data Software Engineering** (BIGDSE), 2015 IEEE/ACM 1st International Workshop on
- **Computational Electromagnetics** (ICCEM), 2015 IEEE International Conference on
- **DC Microgrids** (ICDCM), 2015 IEEE First International Conference on
- **Electromagnetic Compatibility and Signal Integrity**, 2015 IEEE Symposium on
- **Identity, Security and Behavior Analysis (ISBA)**, 2015 IEEE International Conference on
- **Industrial Engineering and Operations Management** (IEOM), 2015 International Conference on
- **Microwaves for Intelligent Mobility** (ICMIM), 2015 IEEE MTT-S International Conference on
- **Multimedia Big Data** (BigMM), 2015 IEEE International Conference on
- **Networking Systems and Security** (NSysS), 2015 International Conference on
- **Sampling Theory and Applications** (SampTA), 2015 International Conference on
- **Signal Processing, Informatics, Communication and Energy Systems** (SPICES), 2015 IEEE International Conference on
- **Smart Cities Conference** (ISC2), 2015 IEEE First International

Examples of New IEEE Conferences in 2014



- **Internet of Things** (WF-IoT), 2014 IEEE World Forum on
- **Humanitarian Technology** Conference, (IHTC), 2014 IEEE Canada International
- **Aerospace Electronics and Remote Sensing Technology** (ICARES), 2014 IEEE International Conference on
- **Antenna Measurements & Applications** (CAMA), 2014 IEEE Conference on
- **Consumer Electronics**, Taiwan (ICCE-TW), 2014 IEEE International Conference on
- **Energy Conversion** (CENCON), 2014 IEEE Conference on
- **Ethics in Science**, Technology and Engineering, 2014 IEEE International Symposium on
- **Transportation Electrification** Asia-Pacific (ITEC Asia-Pacific), 2014 IEEE Conference and Expo
- **Intelligent Energy** and Power Systems (IEPS), 2014 IEEE International Conference on
- **Quantum Optics Workshop** (QOW), 2014
- **Sensor Systems for a Changing Ocean** (SSCO), 2014 IEEE
- **Wireless and Mobile**, 2014 IEEE Asia Pacific Conference on
- **Industrial Engineering and Information Technology** (IEIT), 2014 International Conference on
- **Guidance, Navigation and Control Conference** (CGNCC), 2014 IEEE Chinese

Popular IEEE Standards

IEEE 802 Series—IEEE Standard for Ethernet

IEEE 3000 Standards Collection™—Formerly the IEEE Color Books®, this collection will reorganize the 13 Color Books into approximately 70 “dot” standards covering specific technical topics on all facets of industrial and commercial power systems.

IEEE 81-2012™—IEEE Guide for Measuring Earth Resistivity, Ground Impedance, and Earth Surface Potentials of a Grounding System

2012 National Electrical Safety Code® (NESC®)—Sets the ground rules for practical safeguarding of persons during the installation, operation, or maintenance of electric supply and communications lines and associated equipment.

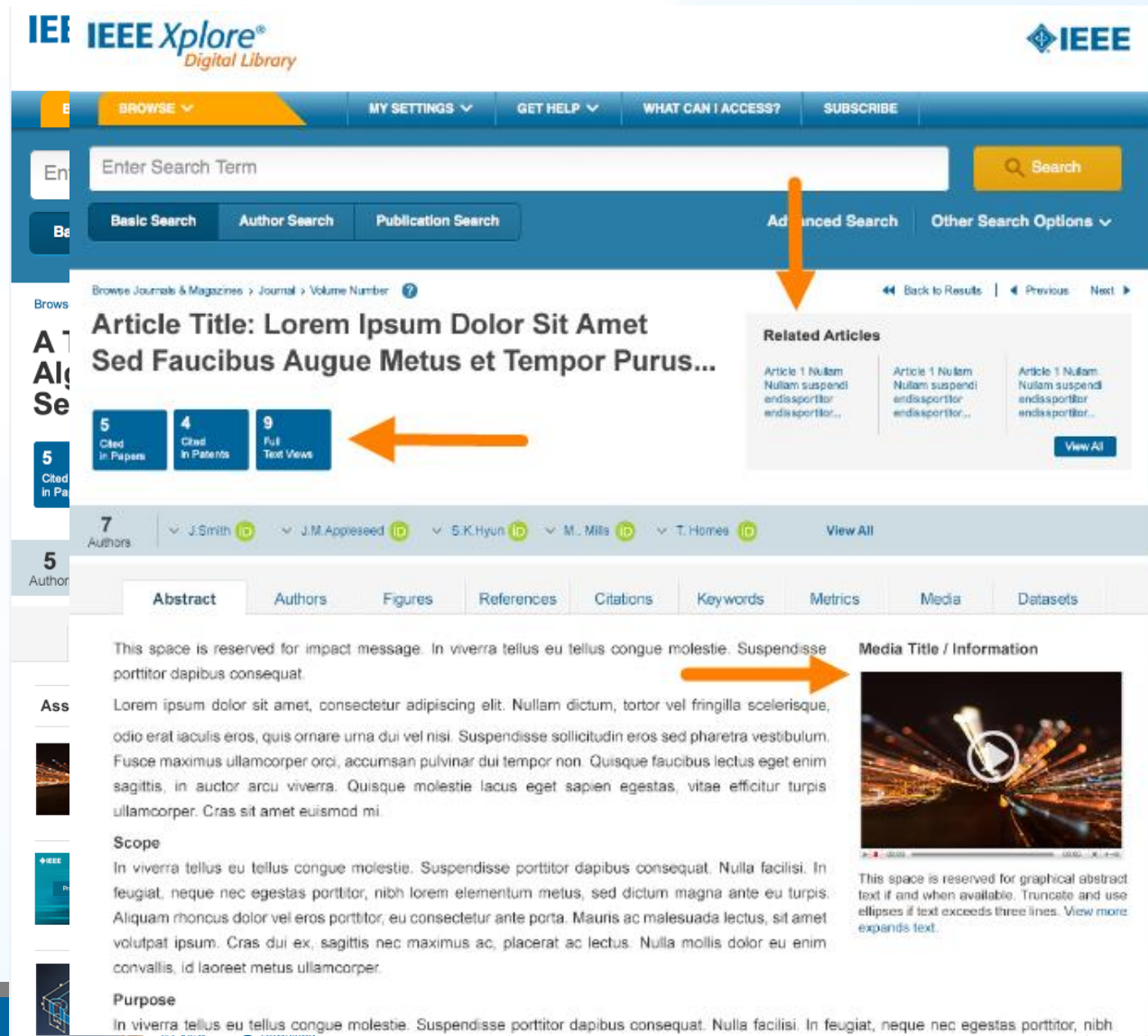
IEEE 43™—IEEE Recommended Practice for Testing Insulation Resistance of Electric Machinery

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L. Minkevicius; B. Voisiat; A. Mekys; R. Venckevicius; I. Kasalynas; D. Seliuta; G. Valusis; G. Racciukaitis; V. Tamosiunas
[Electronics Letters](#)

Year: 2013, Volume: 49, Issue: 1

Pages: 49 - 50, DOI: [10.1049/el.2012.3509](#)

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(309 Kb)



☐ Enhancement of electron mobility in 2D MODFET structures



J. Pozela; V. Juciene; K. Pozela

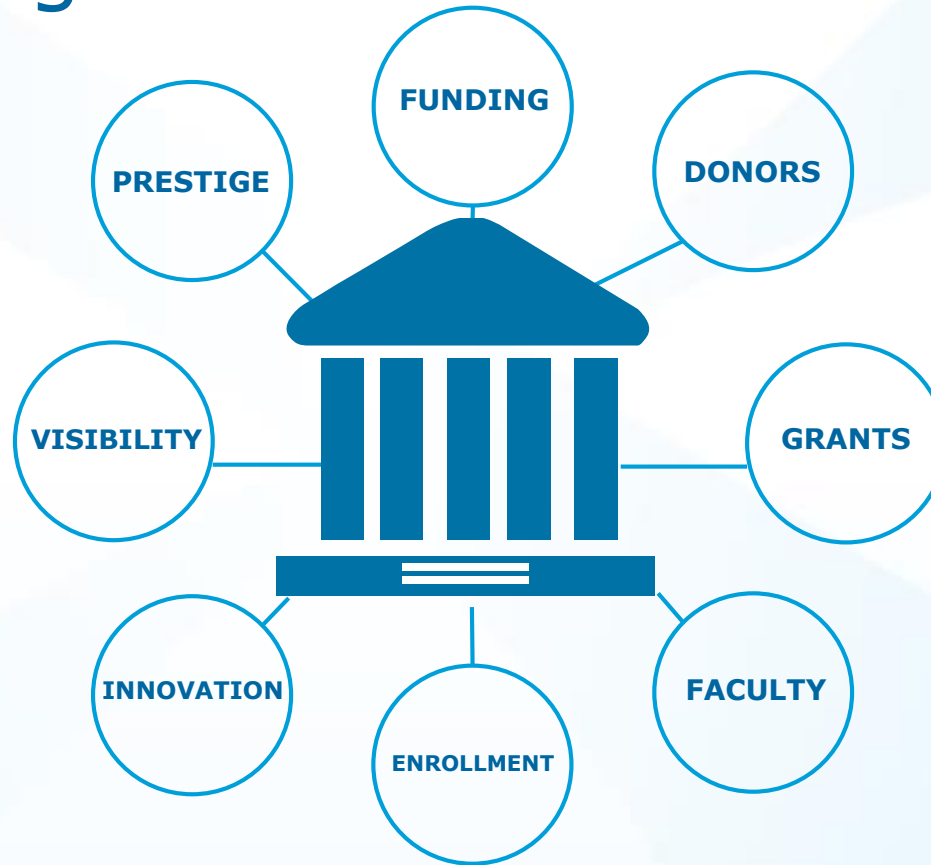
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Aims & Scope

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Aims & Scope

The theory, design and application of Control Systems. It shall encompass components, and the integration of these components, as are necessary for the construction of such systems. The word 'systems' as used herein shall be interpreted to include physical, biological, organizational and other entities and combinations thereof, which can be represented through a mathematical symbolism. The Field of Interest: shall include scientific, technical, industrial or other activities that contribute to this field, or utilize the techniques or products of this field, subject, as the art develops, to additions, subtractions, or other modifications directed or approved by the IEEE Technical Activities Board.

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Structure

Paper Structure

Elements of a manuscript

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Keywords

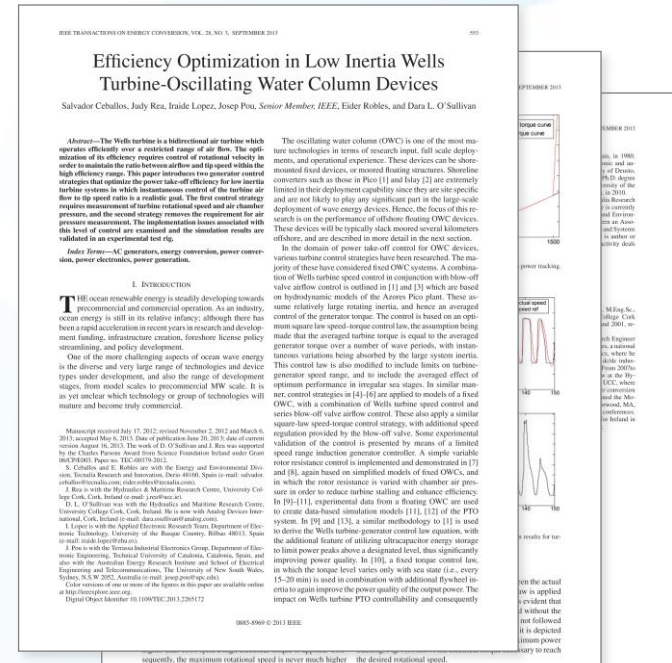
Introduction

Methodology

Results/Discussions/Findings

Conclusion

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Paper Structure

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An effective title should...

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- Describe the content of a paper using the fewest possible words
 - Is crisp, concise
 - Uses keywords
 - Avoids jargon

Good
Title

VS.

Bad
Title

Paper Structure

Good vs. Bad Title

A Human Expert-based Approach to Electrical Peak Demand Management

VS

A better approach of managing environmental and energy sustainability via a study of different methods of electric load forecasting

Paper Structure

Good vs. Better Title

An Investigation into the Effects of Residential Air-Conditioning Maintenance in Reducing the Demand for Electrical Energy

VS

"Role of Air-Conditioning Maintenance on Electric Power Demand"

Paper Structure

Abstract

A “stand alone” condensed version of the article

- No more than 250 words; written in the past tense
- Uses keywords and index terms

What you did

Why you did

Why they're useful & important & move the field forward

How the results were useful, important & move the field forward

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- 5) Ensure that your abstract **reads well and is grammatically correct**.

Good vs. Bad Abstract

The objective of this paper was to propose a human expert-based approach to electrical peak demand management. The proposed approach helped to allocate demand curtailments (MW) among distribution substations (DS) or feeders in an electric utility service area based on requirements of the central load dispatch center. Demand curtailment allocation was quantified taking into account demand response (DR) potential and load curtailment priority of each DS, which can be determined using DS loading level, capacity of each DS, customer types (residential/commercial) and load categories (deployable, interruptible or critical). Analytic Hierarchy Process (AHP) was used to model a complex decision-making process according to both expert inputs and objective parameters. Simulation case studies were conducted to demonstrate how the proposed approach can be implemented to perform DR using real-world data from an electric utility. Simulation results demonstrated that the proposed approach is capable of achieving realistic demand curtailment allocations among different DSs to meet the peak load reduction requirements at the utility level.

Vs

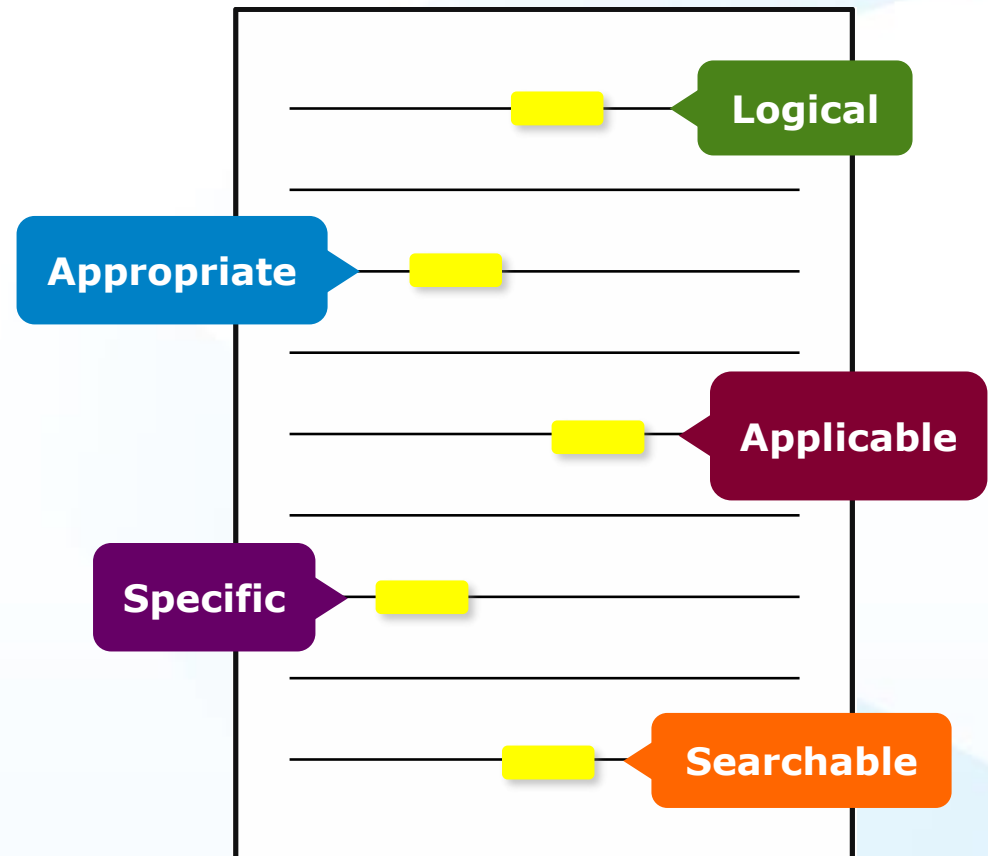
This paper presents and assesses a framework for an engineering capstone design program. **We explain** how student preparation, project selection, and instructor mentorship are the three key elements that must be addressed before the capstone experience is ready for the students. **Next, we describe** a way to administer and execute the capstone design experience including design workshops and lead engineers. **We describe the importance** in assessing the capstone design experience and report recent assessment results of our framework. **We comment** specifically on what students thought were the most important aspects of their experience in engineering capstone design and provide quantitative insight into what parts of the framework are most important.

First person, present tense

No actual results, only describes the organization of the paper

Paper Structure Keywords

Use in the Title and
Abstract for enhanced
Search Engine Optimization



IEEE Keywords

Bit rate, Decoding, Encoding,
Parallel processing, Video
coding

Authors Keywords

High Efficiency Video Coding
(HEVC), parallel programming,
video coding

INSPEC: Controlled Indexing

parallel processing, video coding

INSPEC: Non-Controlled Indexing

12-core system, H.264-advanced video coding, HEVC parallelization approaches, OWF, WPP, frequency 3.33 GHz, high efficiency video coding, overlapped wavefront, parallel efficiency, parallel friendliness, parallel scalability, parallelization proposals, tiles, wavefront parallel processing

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Introduction

- A description of the problem you researched
- It should move step by step through, should be written in present tense:

Generally known
information
about the topic

Prior studies'
historical
context to your
research

Your hypothesis
and an overview
of the results

How the article
is organized

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 - Too broad or vague
 - More than 2 pages

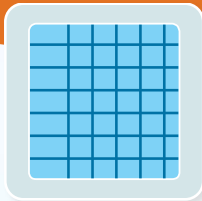
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Methodology

- Problem formulation and the processes used to solve the problem, prove or disprove the hypothesis
- Use illustrations to clarify ideas, support conclusions:

Tables

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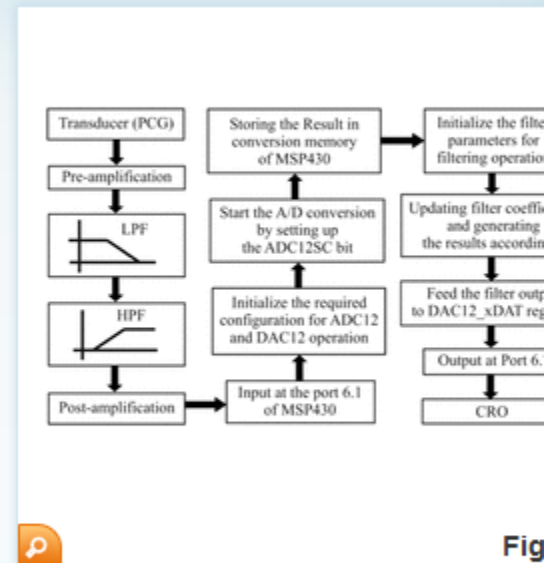
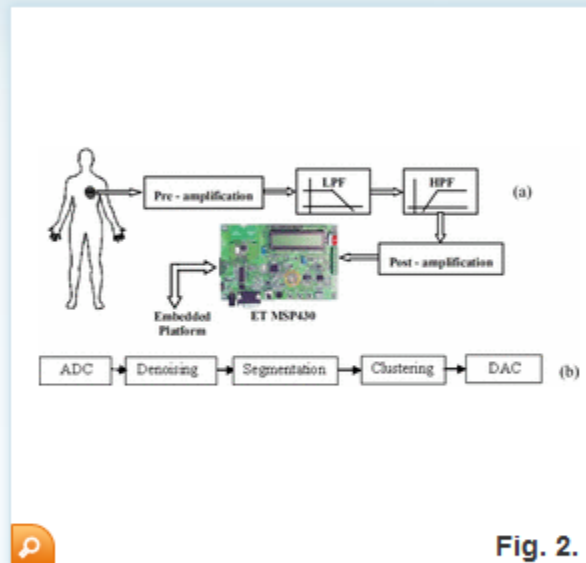
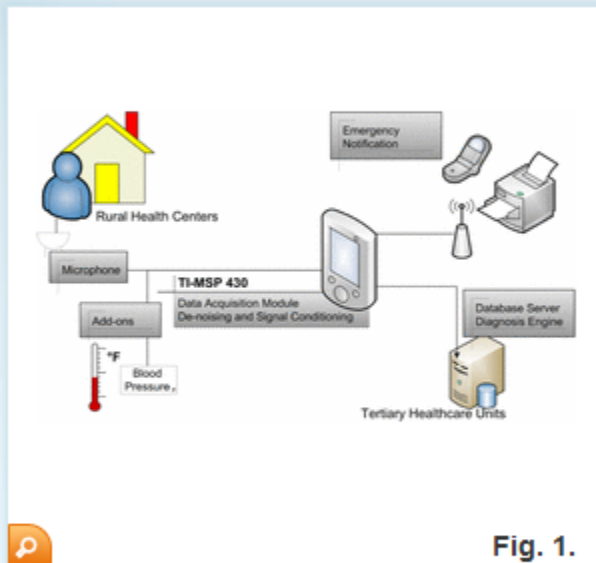
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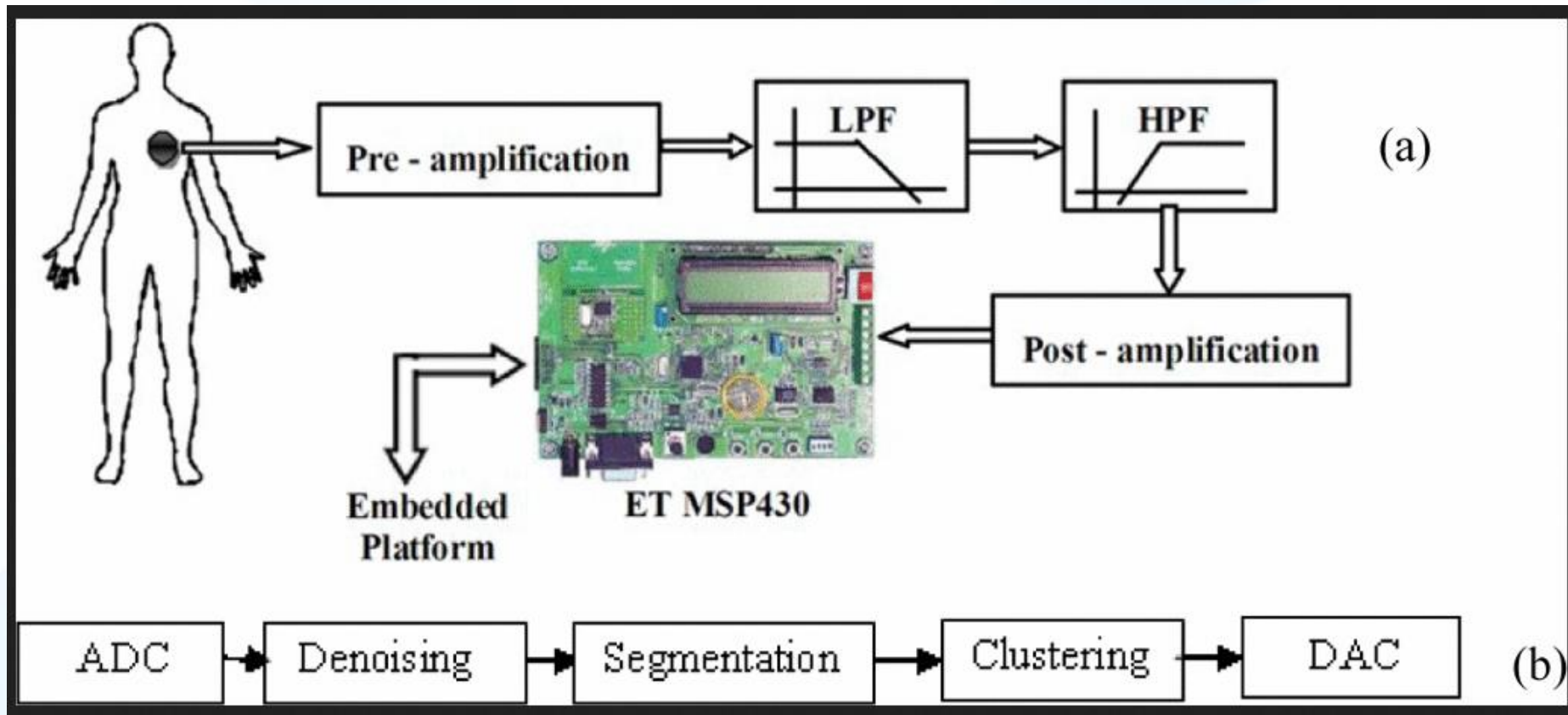
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$$\begin{aligned} & \frac{E \left(x_{\text{HS}}^2 \right) - E \left(y^2 \right)}{E \left(x_{\text{HS}}^2 \right)} \times 100\% \\ & \text{NOISE}_{\text{reduction}} = \frac{E \left(x_{\text{hs_noi}}^2 \right) - E \left(y^2 \right)}{E \left(x_{\text{hs_noi}}^2 \right)} \times 100\% \end{aligned}$$

and NOISE reduction are computed in terms of percentages (see Table 1)

$$\text{HS}_{\text{recover}} = \left(\frac{1 - E\{x_{\text{HS}}^2(n)\} - E\{y^2(n)\}}{E\{x_{\text{HS}}^2(n)\}} \right) \times 100\% \quad (1)$$

$$\text{NOISE}_{\text{reduction}} = \left(\frac{E \{ x_{\text{hs_noi}}^2(n) \} - E \{ y^2(n) \}}{E \{ x_{\text{hs_noi}}^2(n) \}} \right) \times 100\% \quad (2)$$

Paper Structure

Results/discussion

Demonstrate that you solved the problem or made significant advances

Results: Summarized Data

- Should be clear and concise
- Use figures or tables with narrative to illustrate findings

Discussion: Interprets the Results

- Why your research offers a new solution
- Acknowledge any limitations

Results

Discussion

the SC algorithm cover the whole range of w values increase to 3–4 K, except for the TIGRA₁₁₁ database, with an RMSE of 2 K. This last result is explained by the w distribution, which is biased toward low values of w in this database. When only atmospheric profiles with w values lower than 3 g cm^{-2} are selected, the SC algorithm provides RMSEs around 1.5 K, with almost equal values of bias and standard deviation, around 1 K in both cases (with a negative bias, due the SC underestimates the LST). In contrast, when only w values higher than 3 g cm^{-2} are considered, the SC algorithm provides RMSEs higher than 5 K. In these cases, it is preferable to calculate the atmospheric fractions of the SC algorithm directly from (3) rather than approximating them by a polynomial fit approach as given by (4).

V. DISCUSSION AND CONCLUSION

The two Landsat-2 TIR bands allow the inverse comparison of two LST retrieval methods based on different physical assumptions, such as the SC (only one TIR band required) and the TM algorithm (two TIR bands required). Direct inversion of the transfer equation, which can be considered as the "ground-truth" method, is assumed to be a "ground-truth" method under the condition that the information about the surface emissivity and L_d is accurate enough. The SC algorithm described in this letter is a combination of the previous SC algorithm for Landsat-2 TIR bands and the TM algorithm for the ETM+ sensor on board the Landsat-7 platform. In [9], and it could be used to generate consistent LST products from the historical Landsat data using a single algorithm. An advantage of the SC algorithm is that, apart from surface emissivity, only water vapor content is required as input. However, it is expected that errors on LST become unacceptable for high water vapor contents (e.g., $> 3 \text{ cm}^{-1}$). This problem can be partly solved by computing the atmospheric fractions directly from τ , L_u , and L_d values (see [5]), or also by including air temperature as input [15]. A main advantage of the SW algorithm is that it performs well over global conditions and, thus, a wide range of atmospheric parameters, such as air temperature, water vapor, and air pressure, are required as input. However, the two TIR bands are input (apart from surface emissivity at the water TIR band). However, the SC algorithm can be only applied to the new Landsat-8 TIR band, since previous TM/ETM sensors only had one TIR band.

The LST algorithm presented in this letter was tested with simulated data sets obtained for a variety of global atmospheric conditions and surface emissivities. The results showed RMSE values of typically less than 1.5 K, although for the SC algorithm, this accuracy is only achieved for ν values below $5 \text{ g} \cdot \text{cm}^{-2}$. Algorithm testing also showed that the SW errors are lower than the SC errors for increasing water vapor, and vice versa, as demonstrated in the simulation study presented in Sobrino and Jimenez-Muñoz (15). Although an extensive validation exercise from *in situ* measurements is required to assess the performance of the two LST algorithms, the results obtained in the simulated data, the sensitivity data, as well as the previous findings for algorithms with the same mathematical structure give confidence in the algorithm accuracies estimated here.

REFERENCES

- [illegible]

Paper Structure

Conclusion

- Explain what the research has achieved
 - As it relates to the problem stated in the Introduction
 - Revisit the key points in each section
 - Include a summary of the main findings, important conclusions and implications for the field
- Provide benefits and shortcomings of:
 - The solution presented
 - Your research and methodology
- Suggest future areas for research



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IEEE TRANSACTIONS ON SMART GRID, VOL. 5, NO. 4, JULY 2014

We then have

$$\begin{aligned} (P_t^{k+} + P_t^{k-})^2 &= (P_t^{k+} - P_t^{k-})^2 + 4P_t^{k+}P_t^{k-} \\ &< (\hat{P}_t^{k+} - \hat{P}_t^{k-})^2 + 4\hat{P}_t^{k+}\hat{P}_t^{k-} \\ &= (\hat{P}_t^{k+} + \hat{P}_t^{k-})^2 \end{aligned} \quad (32)$$

Since $P_t^{k+} - P_t^{k-} = \hat{P}_t^{k+} - \hat{P}_t^{k-}$, we then have $P_t^{k+} < \hat{P}_t^{k+}$ and $P_t^{k-} < \hat{P}_t^{k-}$. Because the operational cost is an increasing function of $\{P_t^{k+}, P_t^{k-}\}$, we obtain that

$$c_{0/10}(P_t^{k+}, P_t^{k-}) < c_{0/10}(\hat{P}_t^{k+}, \hat{P}_t^{k-}). \quad (33)$$

Therefore the optimal pair $\{P_t^{k+}, P_t^{k-}\}$ must satisfy that $P_t^{k+}P_t^{k-} = 0$, i.e., only one of P_t^{k+}, P_t^{k-} can be non-zero. ■

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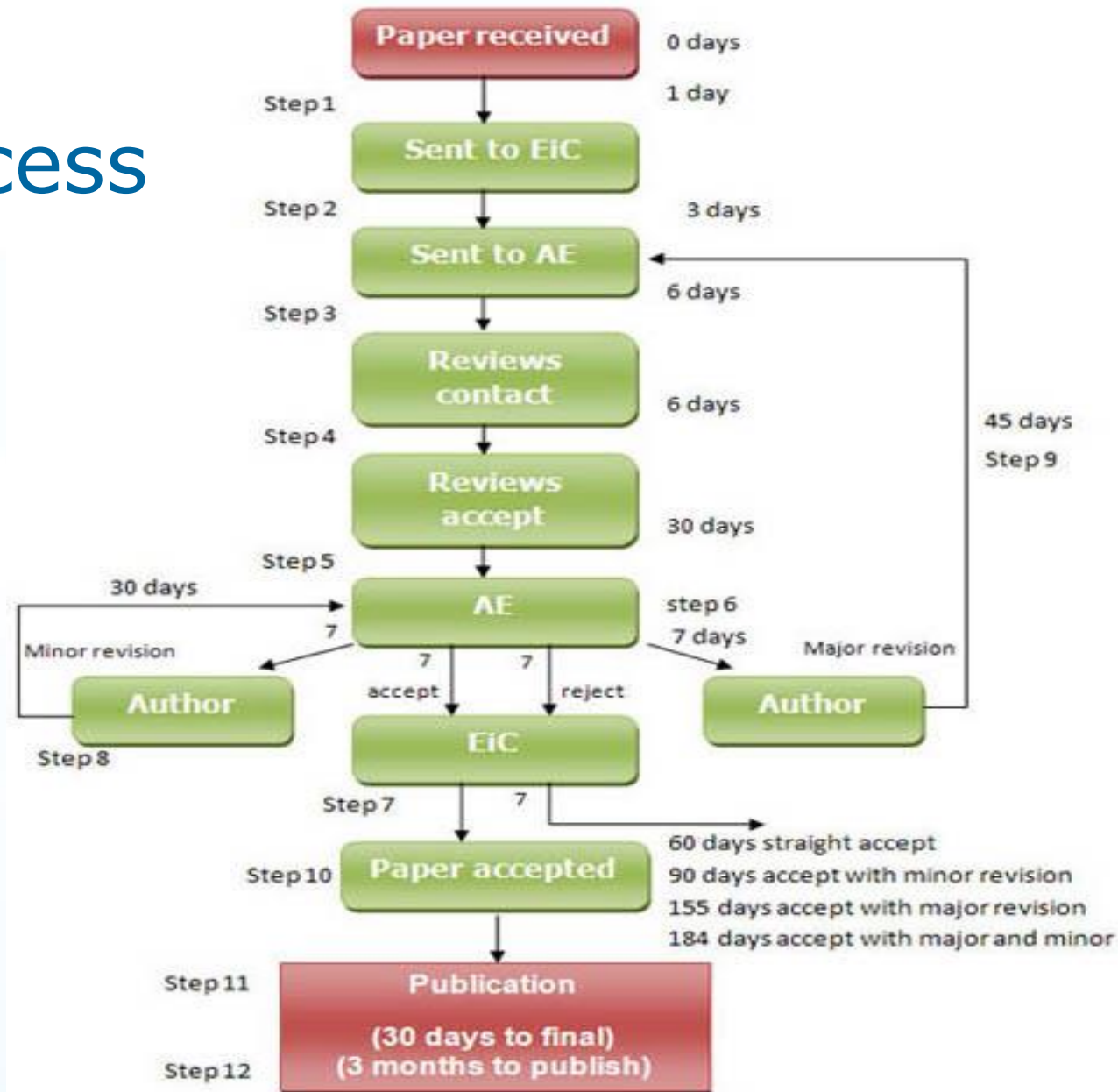
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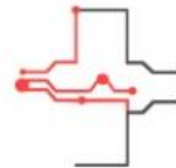


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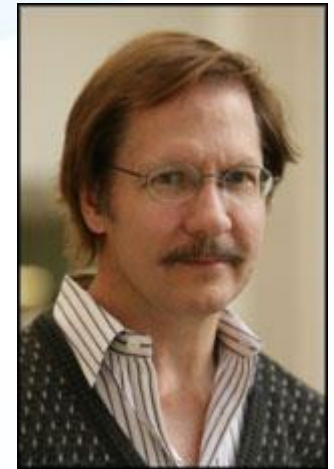
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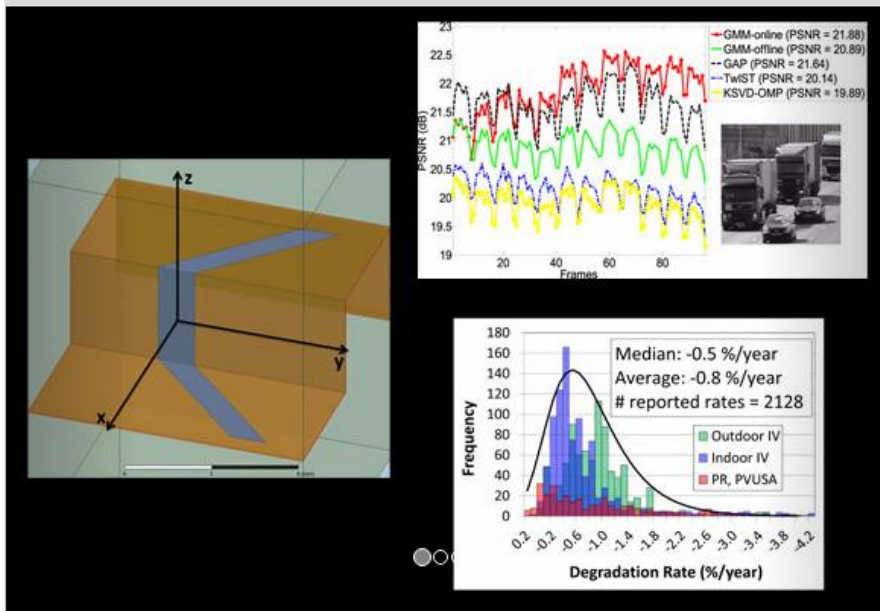
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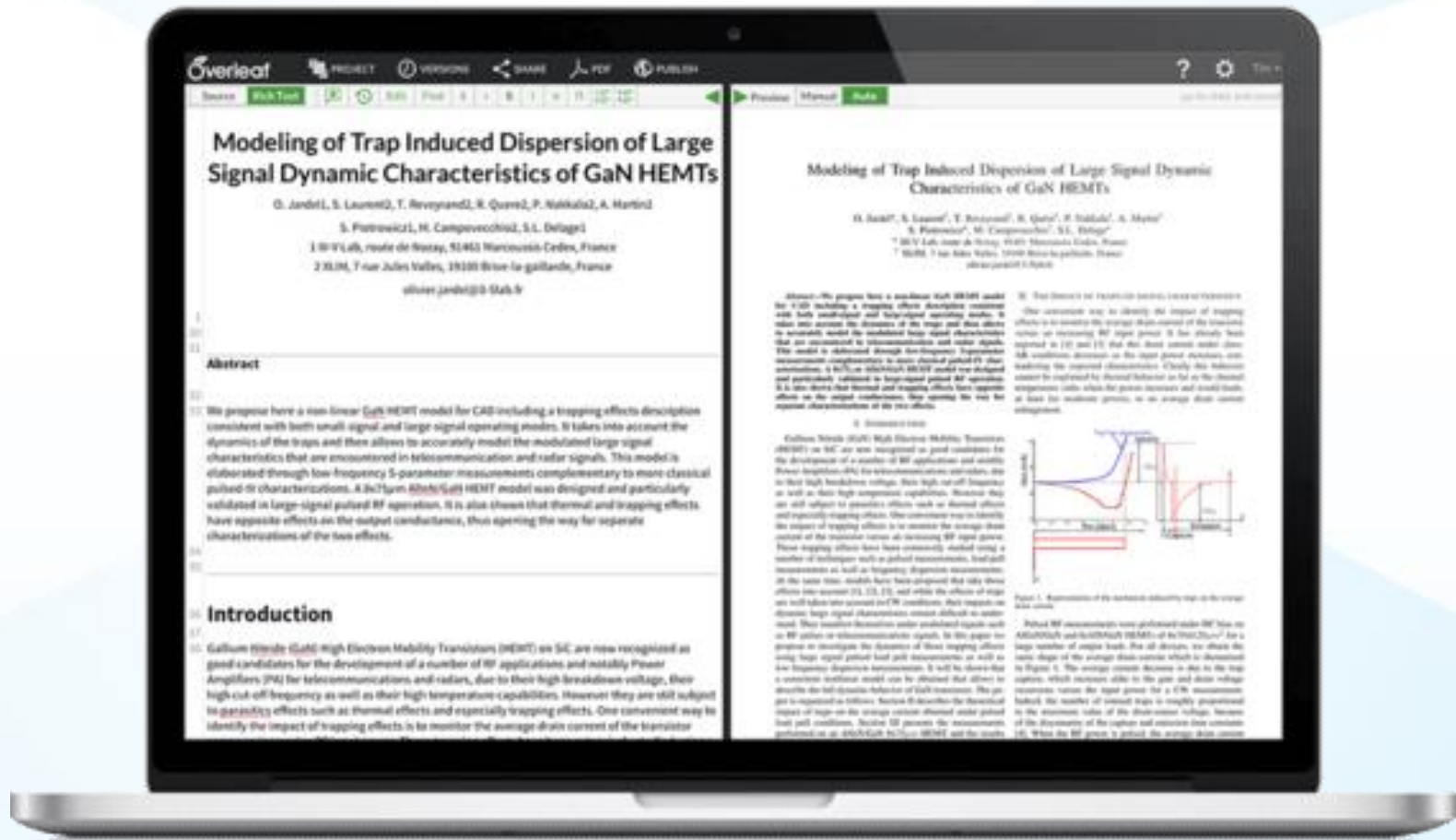
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