

# Techniques for effective searching with IEEE Xplore

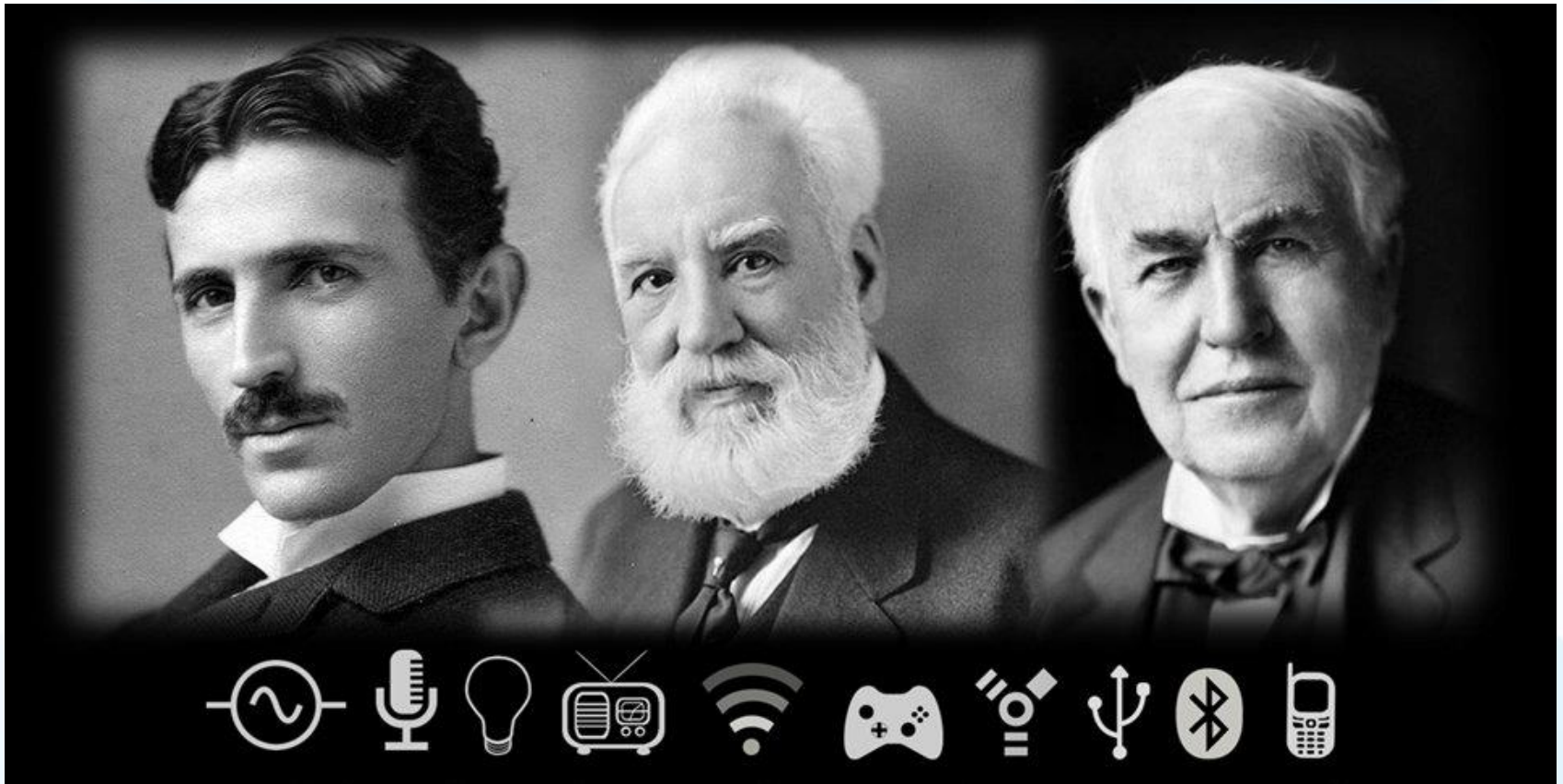
Eszter Lukács

Client Services Manager Europe

**IEEE Xplore**<sup>®</sup>  
*Digital Library*



# 1884: Where we came from



# About the IEEE

- World's largest technical membership association with more than 430,000 members in over 160 countries
- Not for profit organization “Advancing Technology For Humanity”
- Four Core areas of activity
  - Membership organization
  - Conferences organizer
  - Standards developer
  - Publisher of journals, conferences, standards, ebooks and elearning
- IEEE *Xplore* by the numbers:
  - Nearly 4 million total documents
  - Over 3 million unique users
  - More than 8 million downloads per month
  - 15 year anniversary in 2015!



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IEEE Day Contest Winner, Colombia

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## Prisijunk prie IEEE 2016 metais!

IEEE yra keli narystės tipai: IEEE  
studentas, IEEE partneris, IEEE  
narys...

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### IEEE News

2017.01.13

Flame Retardant in Lithium-ion Batteries Could  
Quench Fires

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2017.01.13

Video Friday: Drone Aerodynamics, Spy Monkey,  
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Memo to Tech Professionals: In 2017, Ask For a  
Raise

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2017.01.12

RIP Lily Robotics: the Flying Camera Drone Was  
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Supremely Small BICSEL Laser Traps Light in  
Open Air

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2017.01.11

Clockwork Heart

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### Section Events

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## MODS'15



### Section News

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#### IEEEExtreme 24-Hour Programming Competition 2016

Additional information about IEEEExtreme 24-  
Hour Programming Competition, you can find in  
website here.



# Why you should rely on IEEE information

# Full text access to IEEE/IET Electronic Library (IEL)

- Nearly four million full text documents
- 179 **IEEE journals & magazines**
- 1400+ annual **IEEE conferences** + 43 **VDE conferences**
- More than **2800 IEEE standards** (active, archived, redlines) + **IEEE Standard Dictionary**
- 20 **IET conferences**, 26 **IET journals & magazines**
- **Bell Labs Technical Journal (BLTJ)** back to 1922
- Backfile to 1988, select legacy data back to 1872
- Inspec index records for all articles

# IEEE quality makes an impact

Thomson Reuters Journal Citation Reports® by Impact Factor

## IEEE publishes:

**17 of the top 20** journals in Electrical and Electronic Engineering

**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

The Thomson Reuters Journal Citation Reports presents quantifiable statistical data that provides a systematic, objective way to evaluate the world's leading journals.

Based on the 2015 study released June 2016

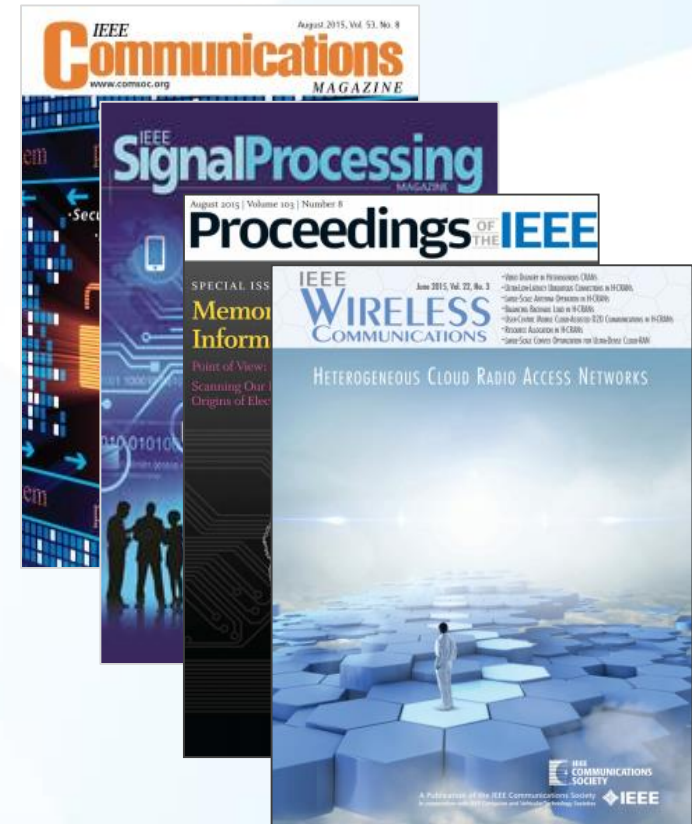
More info: [www.ieee.org/citations](http://www.ieee.org/citations)

# IEEE quality makes an impact

Thomson Reuters Journal Citation Reports® by Impact Factor

## IEEE journals are:

- # **1** in Automation and Control
- # **1** in Artificial Intelligence
- # **1** in Computer Hardware
- # **1** in Cybernetics
- # **1** in Information Systems
- # **1** in Manufacturing Engineering
- # **1** in Theory and Methods
- # **1** in Telecommunications
- # **2** in Electrical Engineering
- # **3** in Aerospace Engineering



The Thomson Reuters Journal Citation Reports presents quantifiable statistical data that provides a systematic, objective way to evaluate the world's leading journals.

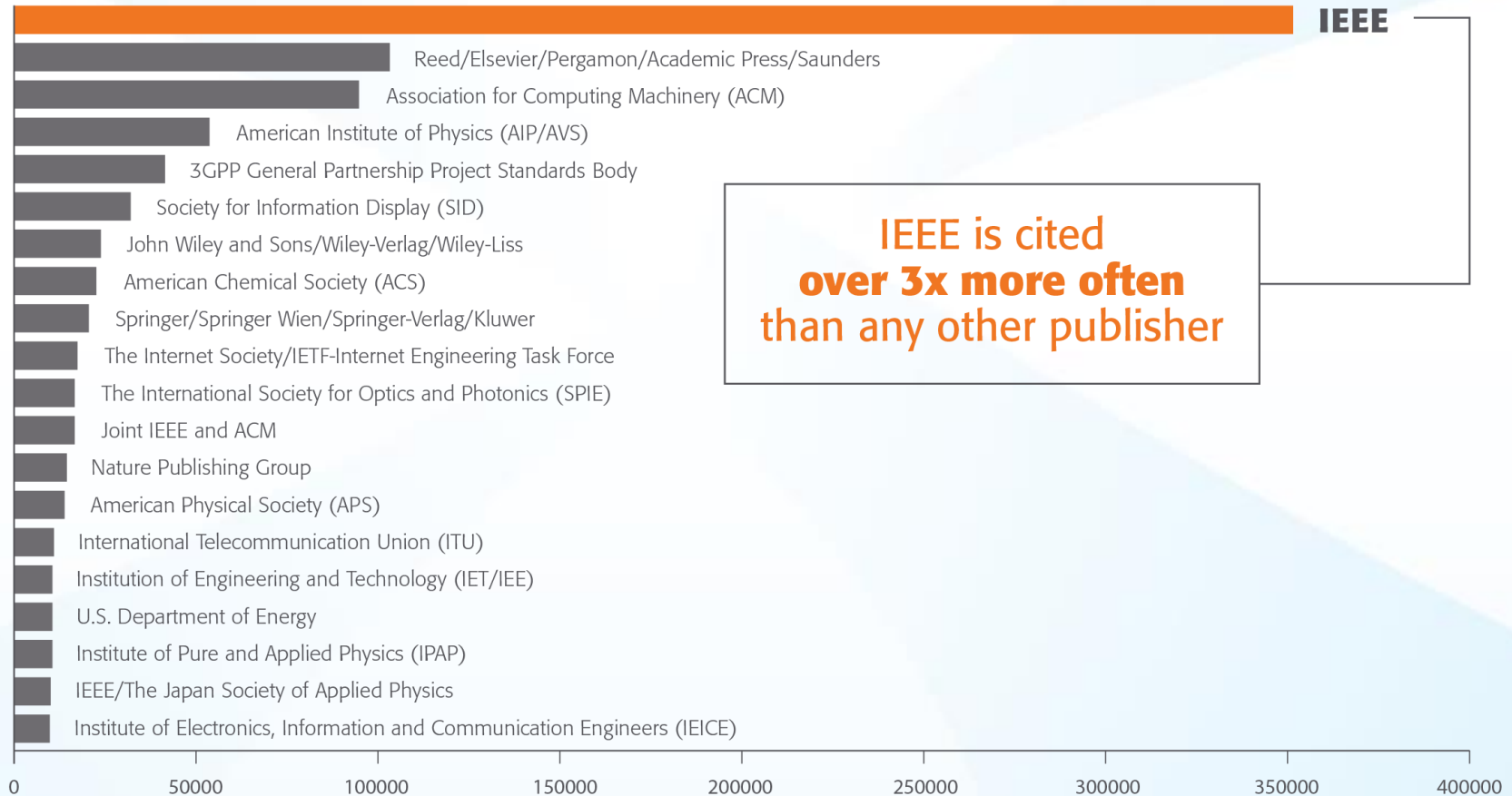
Based on the 2015 study released June 2016



# IEEE and Patents

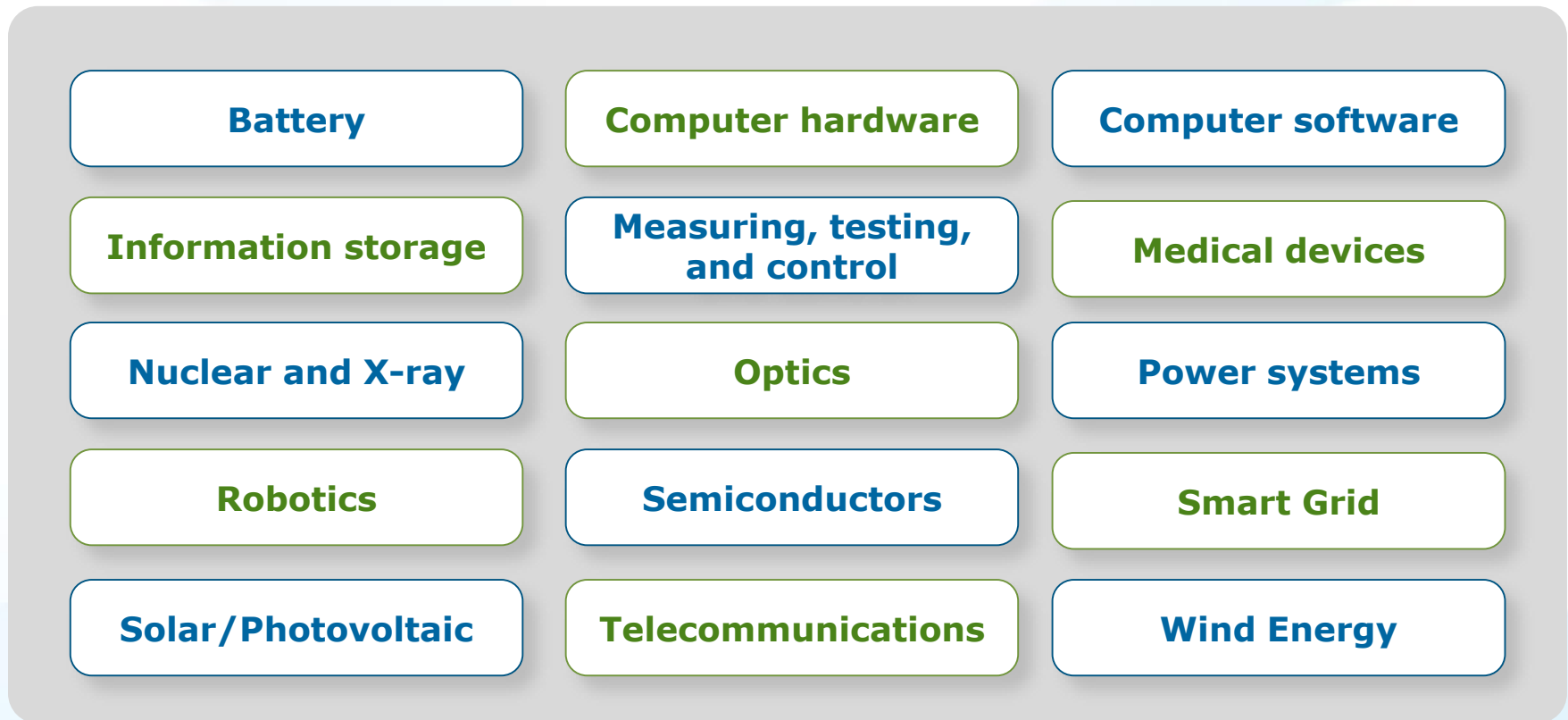
# IEEE Leads US Patent Citations

## 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



Source: 1790 Analytics LLC 2015

# Content on IEEE Xplore Digital Library

# Full text content from all 39 IEEE Societies

**IEEE Aerospace and Electronic Systems Society**

**IEEE Antennas and Propagation Society**

**IEEE Broadcast Technology Society**

**IEEE Circuits and Systems Society**

**IEEE Communications Society**

**IEEE Components, Packaging, and Manufacturing Technology Society**

**IEEE Computational Intelligence Society**

**IEEE Computer Society**

**IEEE Consumer Electronics Society**

**IEEE Control Systems Society**

**IEEE Dielectrics and Electrical Insulation Society**

**IEEE Education Society**

**IEEE Electron Devices Society**

**IEEE Electromagnetic Compatibility Society**

**IEEE Engineering in Medicine and Biology Society**

**IEEE Geoscience and Remote Sensing Society**

**IEEE Industrial Electronics Society**

**IEEE Industry Applications Society**

**IEEE Information Theory Society**

**IEEE Instrumentation and Measurement Society**

**IEEE Intelligent Transportation Systems Society**

**IEEE Magnetics Society**

**IEEE Microwave Theory and Techniques Society**

**IEEE Nuclear and Plasma Sciences Society**

**IEEE Oceanic Engineering Society**

**IEEE Photonics Society**

**IEEE Power Electronics Society**

**IEEE Power & Energy Society**

**IEEE Product Safety Engineering Society**

**IEEE Professional Communications Society**

**IEEE Reliability Society**

**IEEE Robotics and Automation Society**

**IEEE Signal Processing Society**

**IEEE Society on Social Implications of Technology**

**IEEE Solid-State Circuits Society**

**IEEE Systems, Man, and Cybernetics Society**

**IEEE Technology and Engineering Management Society NEW in 2015**

**IEEE Ultrasonics, Ferroelectrics, and Frequency Control Society**

**IEEE Vehicular Technology Society**



# IEEE covers all areas of technology

More than just electrical engineering & computer science

MACHINE LEARNING **BIG DATA**

**OPTICS** RENEWABLE ENERGY

SEMICONDUCTORS **SMART GRID**

**IMAGING** NANOTECHNOLOGY

SIGNAL PROCESSING **AEROSPACE**

**COMMUNICATIONS** HUMAN-CENTERED INFORMATICS

BIOMEDICAL ENGINEERING **ELECTRONICS**

**NEXT GEN WIRELESS** CIRCUITS

**CLOUD COMPUTING**

**CYBER SECURITY** ELECTROMAGNETICS  **IEEE**

# Multidisciplinary Content on IEEE Xplore Digital Library

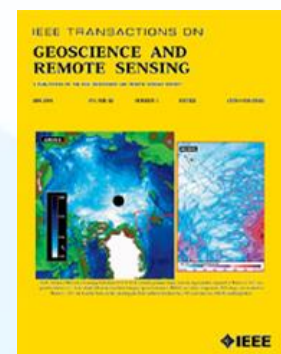
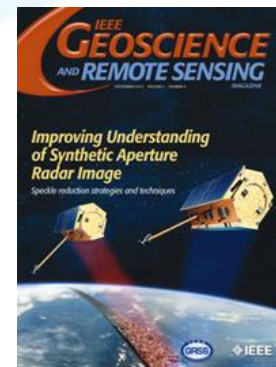
# Life Sciences

- 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
  - IEEE Trans. on Biomedical Engineering
  - 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

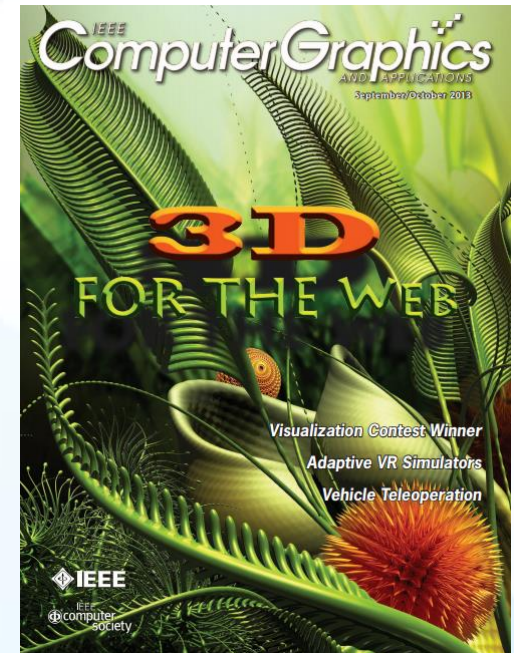
- IEEE's publications cover manufacturing practices and technologies, including **the development of systems, processes, machines, and tools.**
- In IEEE *Xplore*, you'll find information on **virtual manufacturing, computer integrated manufacturing, agile manufacturing, quality control, robotics and automation, mechatronics**, and much more
- Relevant IEEE publications include:
  - IEEE/ASME Transactions on Mechatronics (#1 most cited journal in Engineering - Manufacturing)
  - IEEE Transactions on Components, Packaging and Manufacturing Technology
  - 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

- IEEE *Xplore* covers the leading edge of **computer graphics technology and its applications** in everything from business to the arts.
- Topics include **computer graphics, design, animation, 3D, user interface, motion graphics**, and more
- Examples of IEEE *Xplore* publications:
  - IEEE Computer Graphics
  - IEEE Trans. On Visualization & Computer Graphics
  - International Conference on Computer-Aided Design & Computer Graphics
  - 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 Pökelitz  
Blue Byte Games

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  
• Computational and artificial intelligence based game design  
• 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

General Chairs: Günter Rudolph, TU Dortmund, Germany  
Mike Preuss, WWU Münster, Germany  
Program Chairs: Marjani Elathari, University of Malta  
Moshe Sipper, Ben-Gurion University of the Negev, Israel  
Tutorials/Special Sessions Chair: Philip Hingston, Edith Cowan University, Perth, Australia  
Competition Chair: Simon Lucas, University of Essex, UK  
Keynote Chair: Gillian Smith, Northeastern University, Boston, USA  
Proceedings Chair: Paolo Bordini, Aalborg University, Copenhagen, Denmark

IEEE Computational Intelligence Society

# With IEEE *Xplore*, learn how technology impacts fields such as...

**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

**P**ATIENT-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.

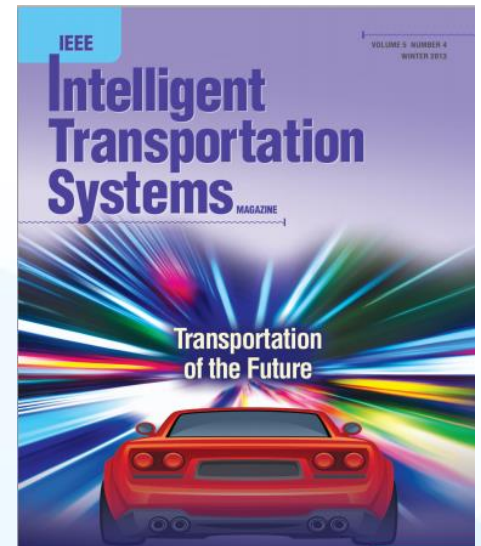
A new Neural Sensing Healthcare System for 3D Vision Technology, NeuroGlasses, is presented in [7]. NeuroGlasses is a nonintrusive, wearable physiological signal monitoring system to facilitate health analysis and diagnosis of 3-D video watchers. The NeuroGlasses system acquires health-related signals 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

# With IEEE *Xplore*, learn how technology impacts fields such as...

**Transportation:** intelligent transportation systems, logistics, supply chain management, and more

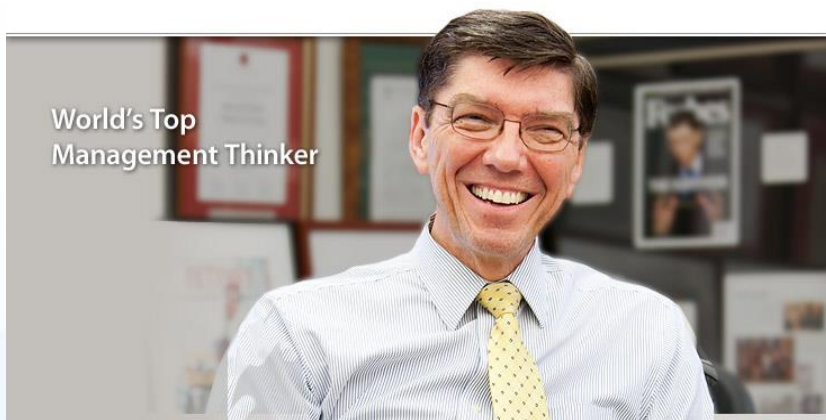
- Related IEEE Journals & Conferences:
  - IEEE Trans. on Intelligent Transportation Systems
  - IEEE Intelligent Transportation Systems Magazine
  - IEEE Trans. on Automation Science and Engineering
  - IEEE International Conference on Automation and Logistics



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**Business & Finance:** information systems, project management, risk management, business informatics, R&D project selection and evaluation, IT investment justification, innovation, and more

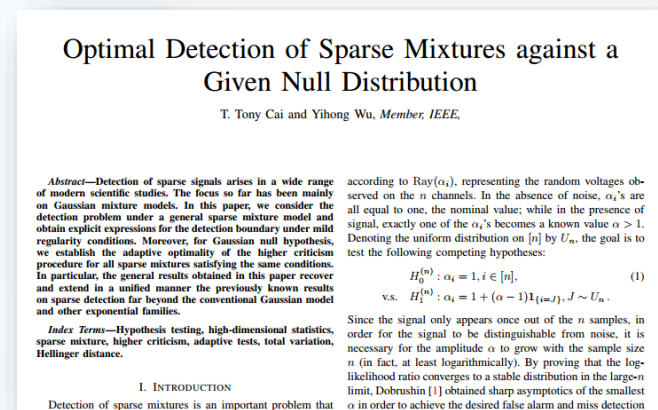
Read articles by leaders in the field:



**Prof. Clayton Christensen**  
*Harvard Business School*

"Innovator's Dilemma"

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



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



# With IEEE *Xplore*, learn how technology impacts fields such as...

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

## Dimensional Analysis of a Crime Scene from a Single Image

Dimensional analysis is a technique used in forensic science to analyze crime scenes. It involves measuring the dimensions of objects found at a crime scene and comparing them to known objects. This can help investigators identify the objects and determine their location. The technique is also used to analyze the layout of a crime scene and to identify the direction of travel of a suspect. This paper appears in: *Information Society (i-Society)*, 2012 International Conference on, Issue Date: 25-28 June 2012, Written by: Watney, Murdoch

## Crime Forecasting Using Data Mining Techniques

Crime is classified as a social phenomenon that is influenced by a variety of factors, including social, economic, and cultural factors. A better understanding of these factors can help in the development of crime prevention strategies. This paper discusses the use of data mining techniques to analyze crime data and to identify patterns. The result of our research 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 appears in: *Information Society (i-Society)*, 2012 International Conference on, Issue Date: 25-28 June 2012, Written by: Watney, Murdoch

# With IEEE *Xplore*, learn how technology impacts fields such as...

**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

...increasing awareness of new audiences...

# With IEEE *Xplore*, learn how technology impacts fields such as...

**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  
to present these ch  
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



# With IEEE *Xplore*, learn how technology impacts fields such as...

**Apparel Design:** e-textiles, smart fabrics, intelligent clothing, wearable computing, and more



## Wearable Computing

Editor: Bernt Schiele ■ MPI Informatics ■ [schiele@mpi-inf.mpg.de](mailto: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*

**A**s 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).

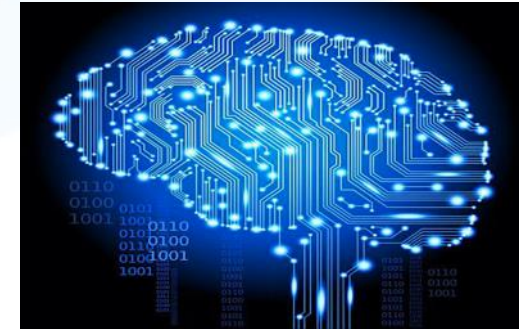
The solution to the chicken-and-egg problem must incorporate all steps—from garment production through to wearable sensing apps. With appropriate abstraction, as shown in

process should essentially remain 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***



— All Included in an IEL Subscription

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# New IEEE Journals Coming in 2016

In 2016, IEEE will introduce four new journals that will be available for subscription:

- *IEEE Transactions on **Intelligent Vehicles***
- *IEEE Journal on **Multiscale and Multiphysics Computational Techniques***
- *IEEE **Robotics and Automation Letters***
- *IEEE Transactions on **Sustainable Computing***



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# New IEEE Journals from 2015

- *IEEE Trans. on **Big Data***
- *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*

All included in an IEL subscription

For a complete title listing, to go: <http://ieeexplore.ieee.org/xpl/opacjrn.jsp>



# 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

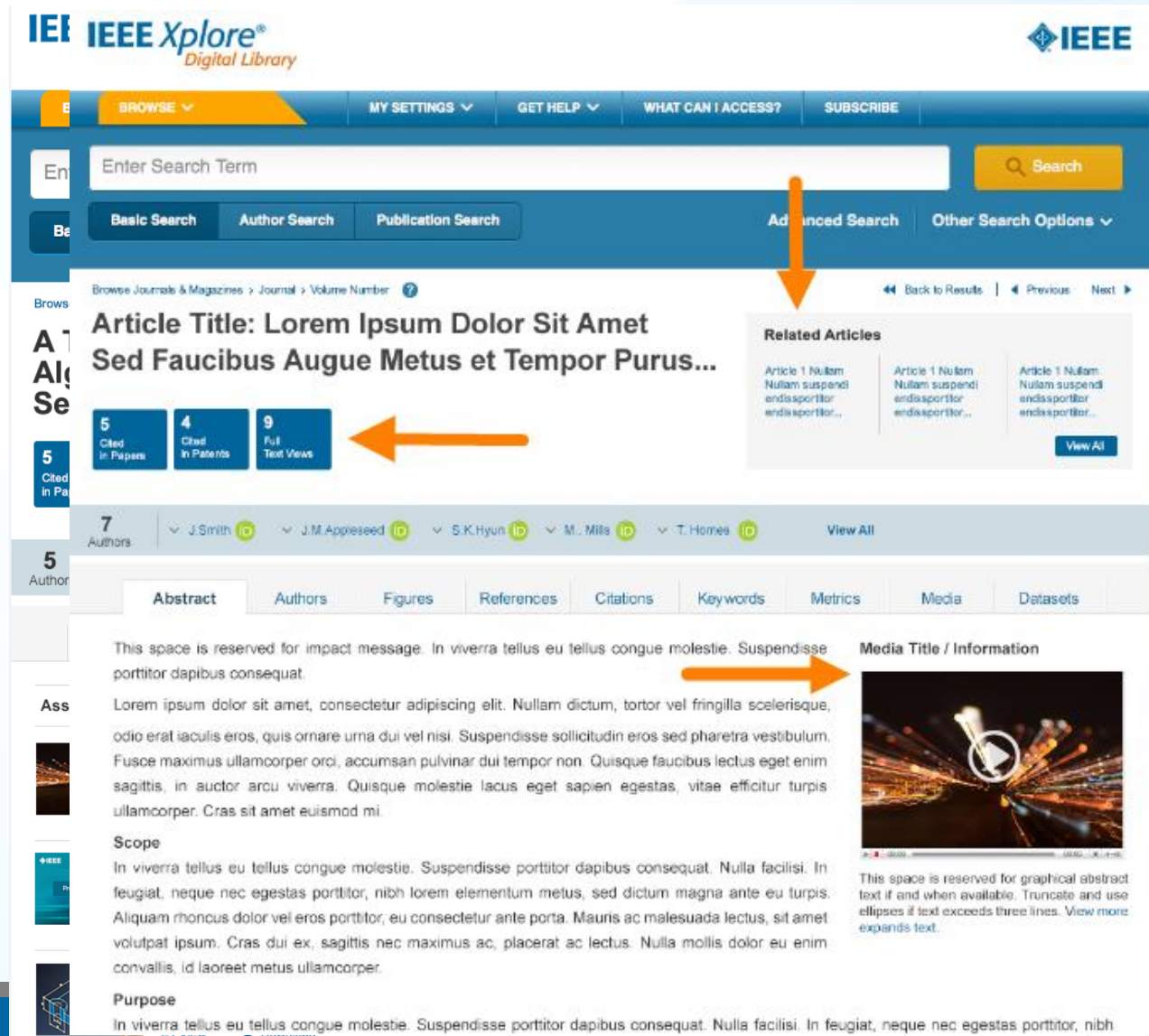
**IEEE 80™**—IEEE Guide for Safety in AC Substation Grounding

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



# Enhancing the User Experience: Redesign of Full-Text HTML Articles

- More prominent
  - article metrics
  - related articles
  - featured media
- Author's ORCID identifier & bio
- Metrics gallery
- Multimedia gallery





# NEW! Full-Text HTML for Standards

- Modern, mobile-friendly design
- Figures carousel
- Table of contents within Standard
- Search within a Standard
- Evolution of the Standard

The screenshot displays the IEEE Xplore Digital Library website. At the top, the IEEE Xplore logo and 'Digital Library' text are visible, along with an 'Institutional Sign In' link. A navigation bar includes links for 'BROWSE', 'MY SETTINGS', 'GET HELP', 'WHAT CAN I ACCESS?', and 'SUBSCRIBE'. A search bar with the placeholder 'Enter Search Term' and a 'Search' button is present. Below the search bar, there are tabs for 'Basic Search', 'Author Search', and 'Publication Search', along with links for 'Advanced Search' and 'Other Search Options'. The main content area shows the title 'IEEE 18 - 2004 IEEE Standard for Shunt Power Capacitors', indicating it is a 'Revision of IEEE 12-1995' and has a 'Document Status: Active'. A navigation bar below the title includes tabs for 'Abstract', 'Figures', 'References', 'Cited By', 'Keywords', and 'Versions'. The 'Figures' tab is selected, displaying a carousel of three figures: Fig. 1 (a diagram of a capacitor structure with layers M, L, HH, VV, and HV, and a coordinate system X(f, m)), Fig. 2 (two graphs showing the relationship between X and f), and Fig. 3 (four graphs showing the relationship between f and X). Below the carousel is a 'View All' button. At the bottom, there is a 'Table of Contents' section with a 'NEXT' button labeled 'Section 1: Overview'. On the left side, there is a sidebar with options for 'Download PDF', 'Download Citations', 'Email', 'Print', 'Request Permissions', and 'Share'. On the right side, there is a search bar and a 'Full Text' button.

# NEW! Enhancing Metrics: Altmetrics

Browse Journals & Magazines > IEEE Journal on Selected Area... > Volume: 32 Issue: 6 ?

[Back to Results](#) | [Next >](#)

## What Will 5G Be?

[View Document](#)

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architecture  
and key  
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**7**

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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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### ☐ Enhancement of electron mobility in 2D MODFET structures



J. Pozela; V. Juciene; K. Pozela

[Proceedings International Workshop on Physics and Computer Modeling of Devices Based on Low-Dimensional Structures](#)

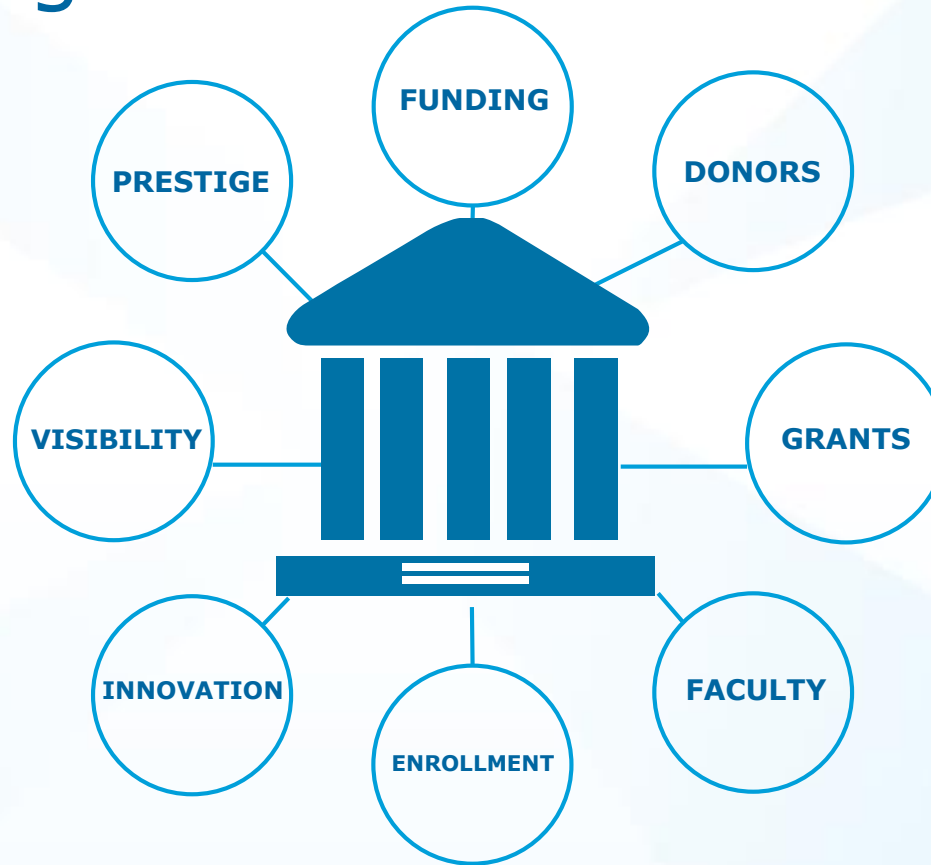
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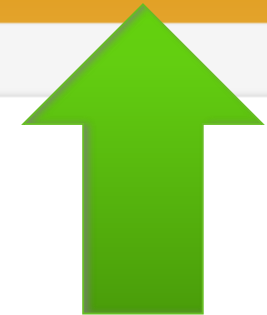
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# Elements of a manuscript

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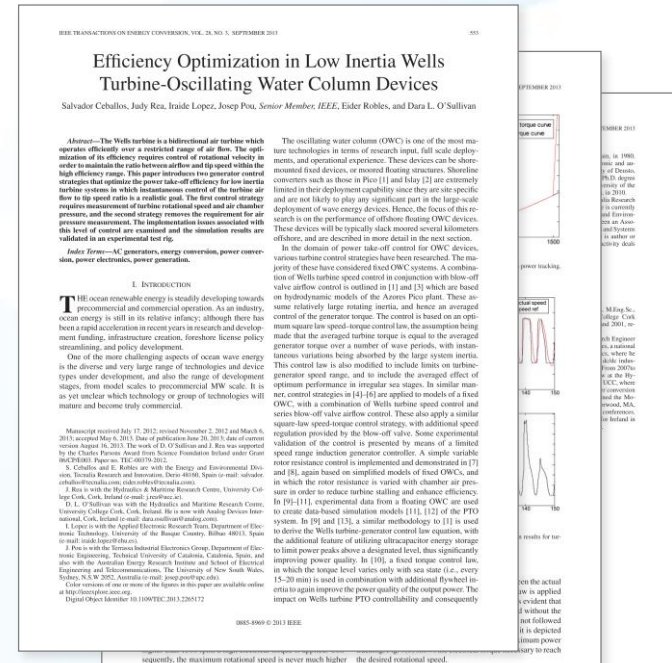
# Introduction

# Methodology

## Results/Discussions/Findings

# Conclusion

## References



# Paper Structure

## Title

An effective title should...

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- Grab the reader's attention
- Describe the content of a paper using the fewest possible words
  - Is crisp, concise
  - Uses keywords
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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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# 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

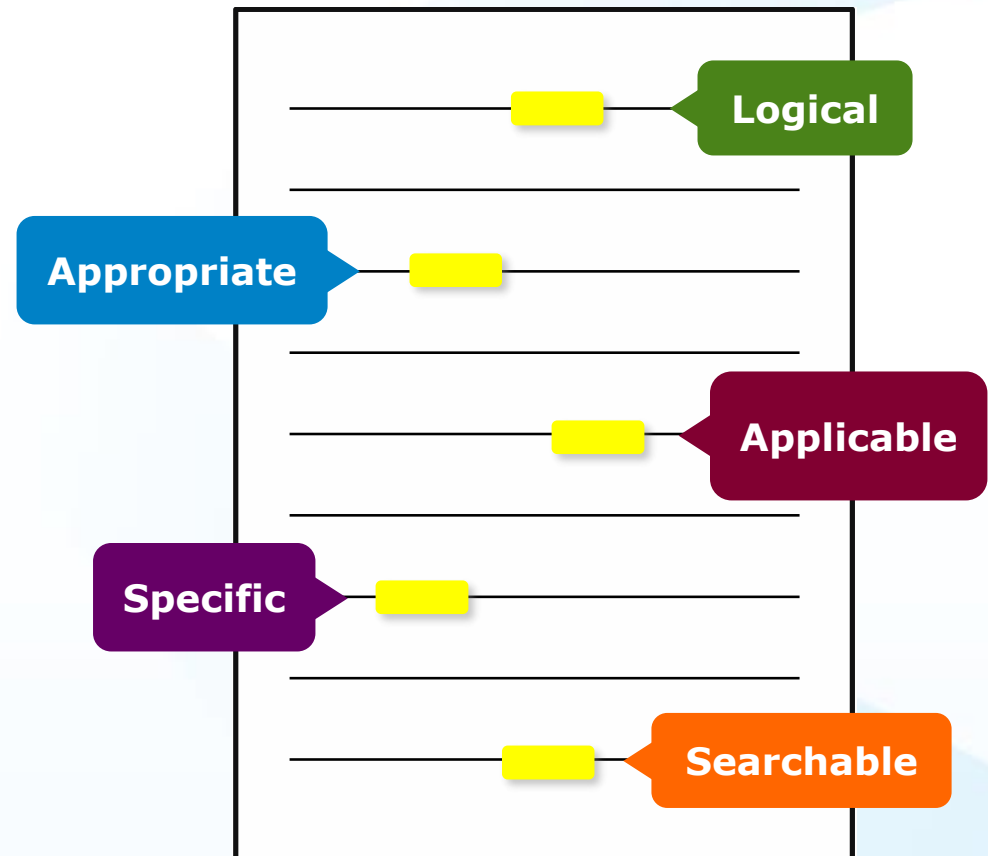
This paper presents and assesses a framework for an engineering capstone design program. **We explain** how student preparation, project selection, and instructor mentorship are the three key elements that must be addressed before the capstone experience is ready for the students. **Next, we describe** 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

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### **INSPEC: Controlled Indexing**

parallel processing, video coding

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### **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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# Paper Structure

## 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

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is organized

- The introduction should **not be**
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  - More than 2 pages

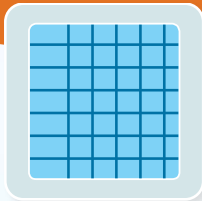
# Paper Structure

## Methodology

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

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Present representative data  
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to show



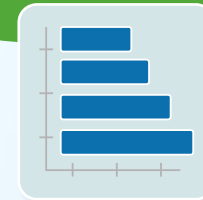
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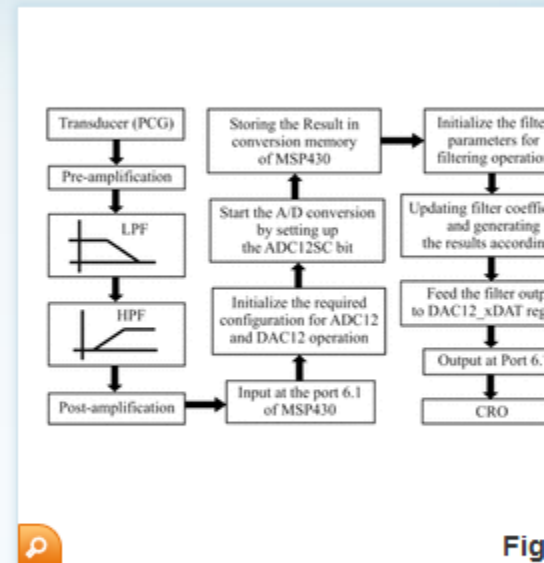
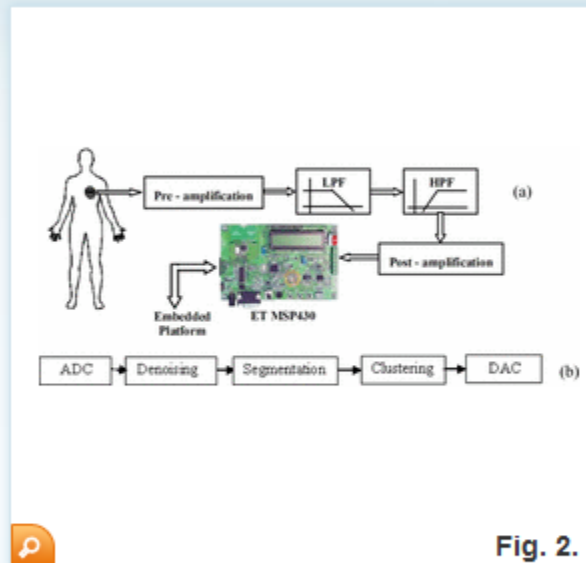
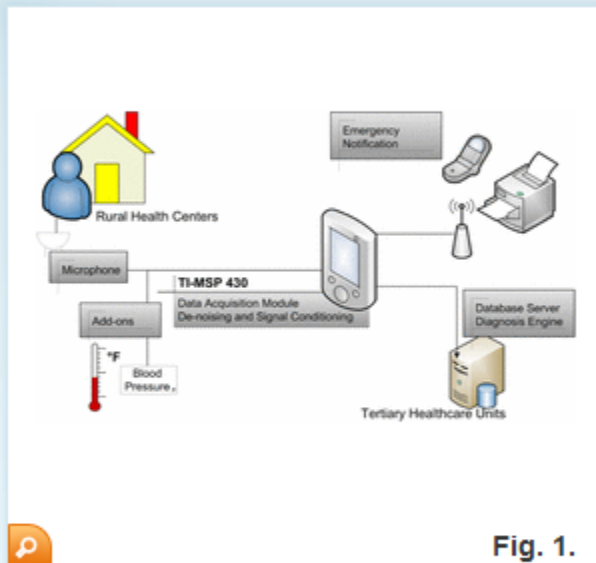
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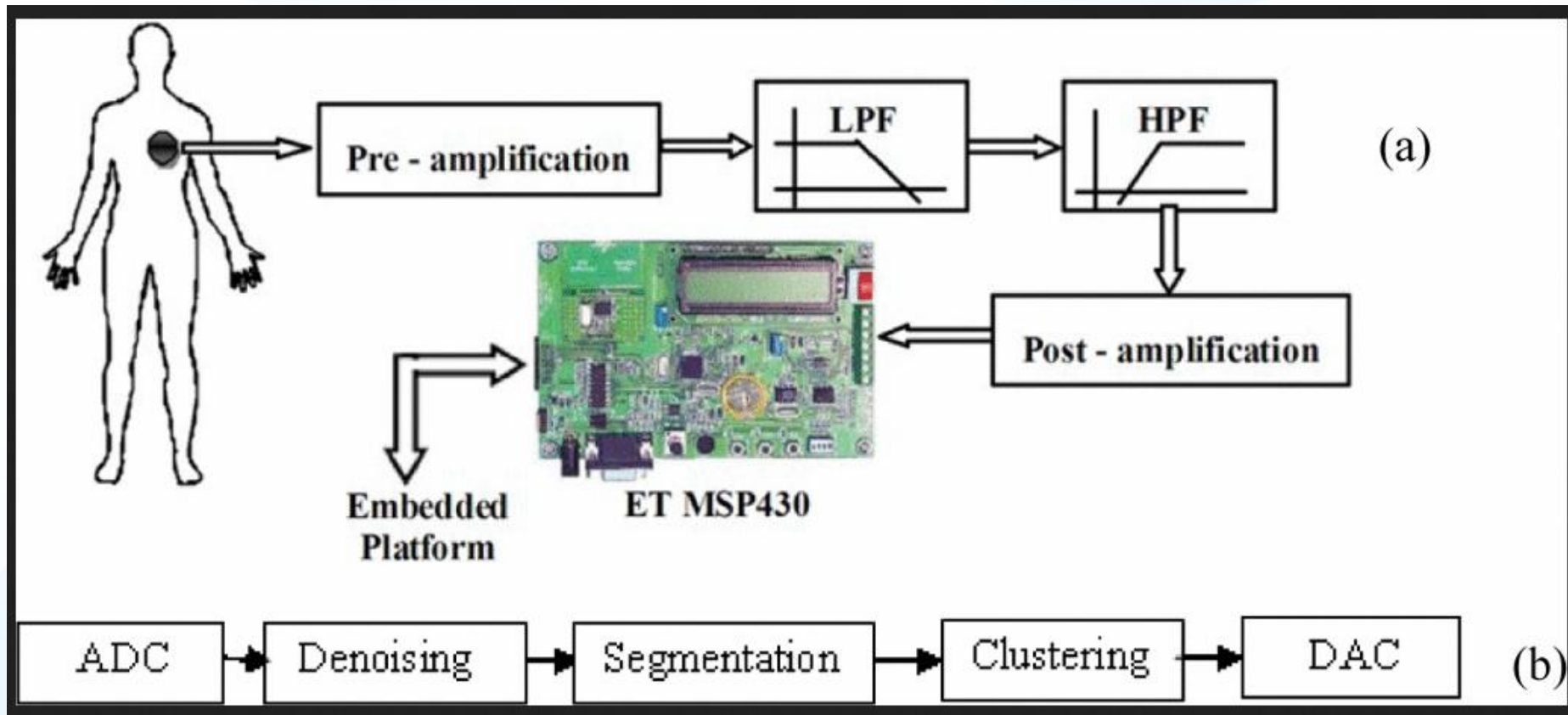
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```

and  $\text{NOISE}_{\text{reduction}}$  are computed in terms of percentages (see Table 1)

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

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



# Paper Structure

## 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



# Paper Structure

# References

- Support and validate the hypothesis your research proves, disproves or resolves
- There is no limit to the number of references
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Properly  
cited material

1538

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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Peng Yang (S'11) received the B.Sc. degree in electrical engineering from University of Science and Technology, Anhui, China in 2009, and the M.Sc. and Ph.D. degrees in electrical engineering from Washington University in St. Louis, St. Louis, MO, USA, in 2011 and 2014, respectively. His Ph.D. advisor is Dr. Arya Nehorai.

His research interests include statistical signal processing, optimization, machine learning, and compressive sensing, with applications to smart grids.



Arya Nehorai (S'80–M'83–SM'90–F'94) received the B.Sc. and M.Sc. degrees from the Technion, Haifa, Israel, and the Ph.D. degree from Stanford University, Stanford, CA, USA.

He is the Eugene and Martha Lohman Professor and Chair of the Preston M. Green Department of Electrical and Systems Engineering (ESE) at Washington University in St. Louis (WUSTL), St. Louis, MO, USA. Earlier, he was a faculty member at Yale University and the University of Illinois at Chicago.

Dr. Nehorai served as Editor-in-Chief of *IEEE Transactions on Signal Processing* from 2003 to 2009. He was the Vice President of the IEEE Signal Processing Society (SPS), the Chair of the Publications Board, and a member of the Executive Committee of this Society. He was the founding Editor of the special column on Leadership Reflections in *IEEE Signal Processing Magazine* from 2003 to 2006. He has been a Fellow of the IEEE since 1994, the Royal Statistical Society since 1996, and the AAAS since 2012.

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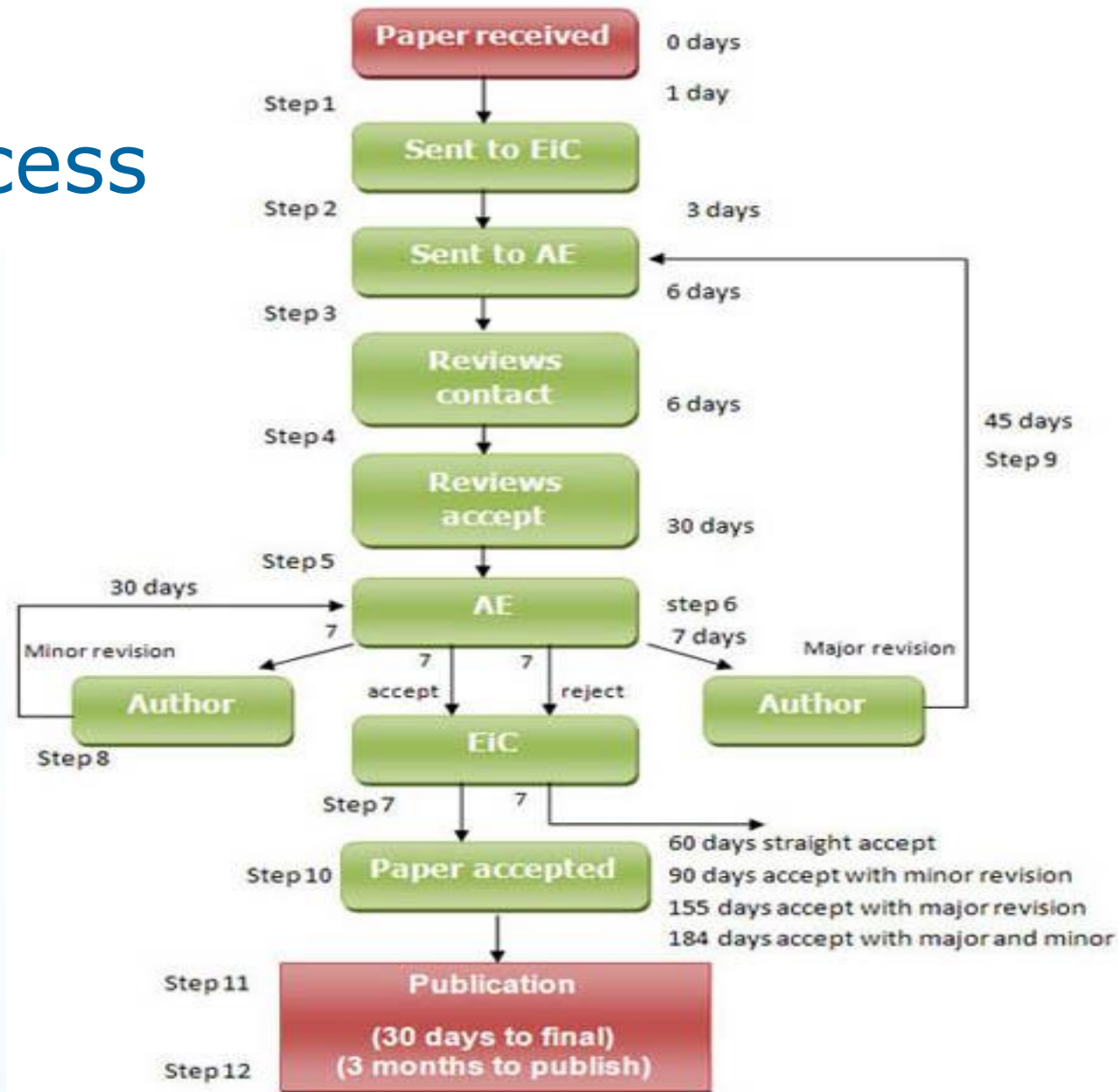
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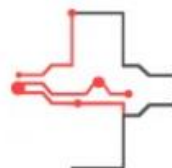


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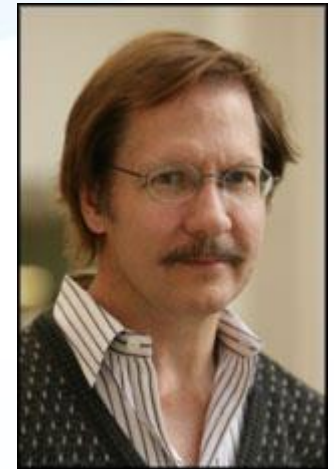
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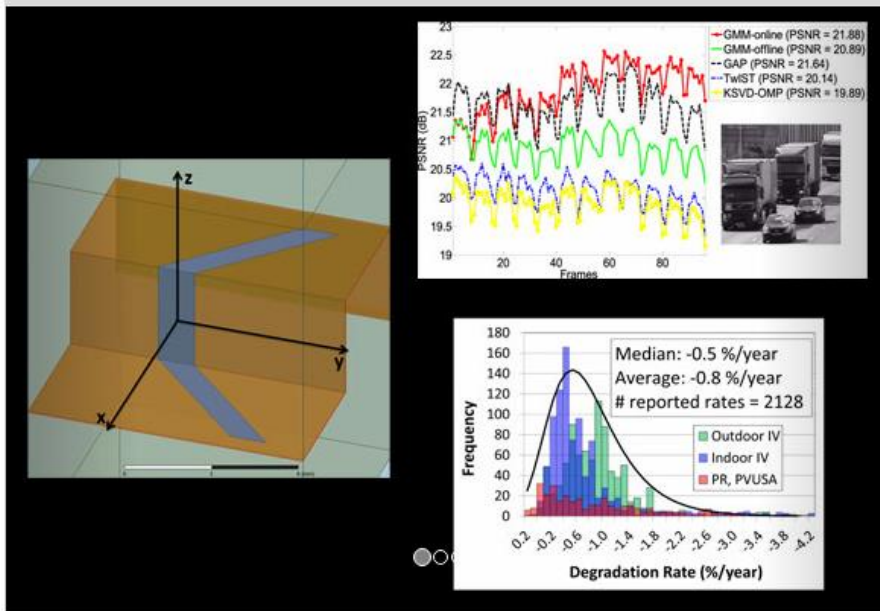
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
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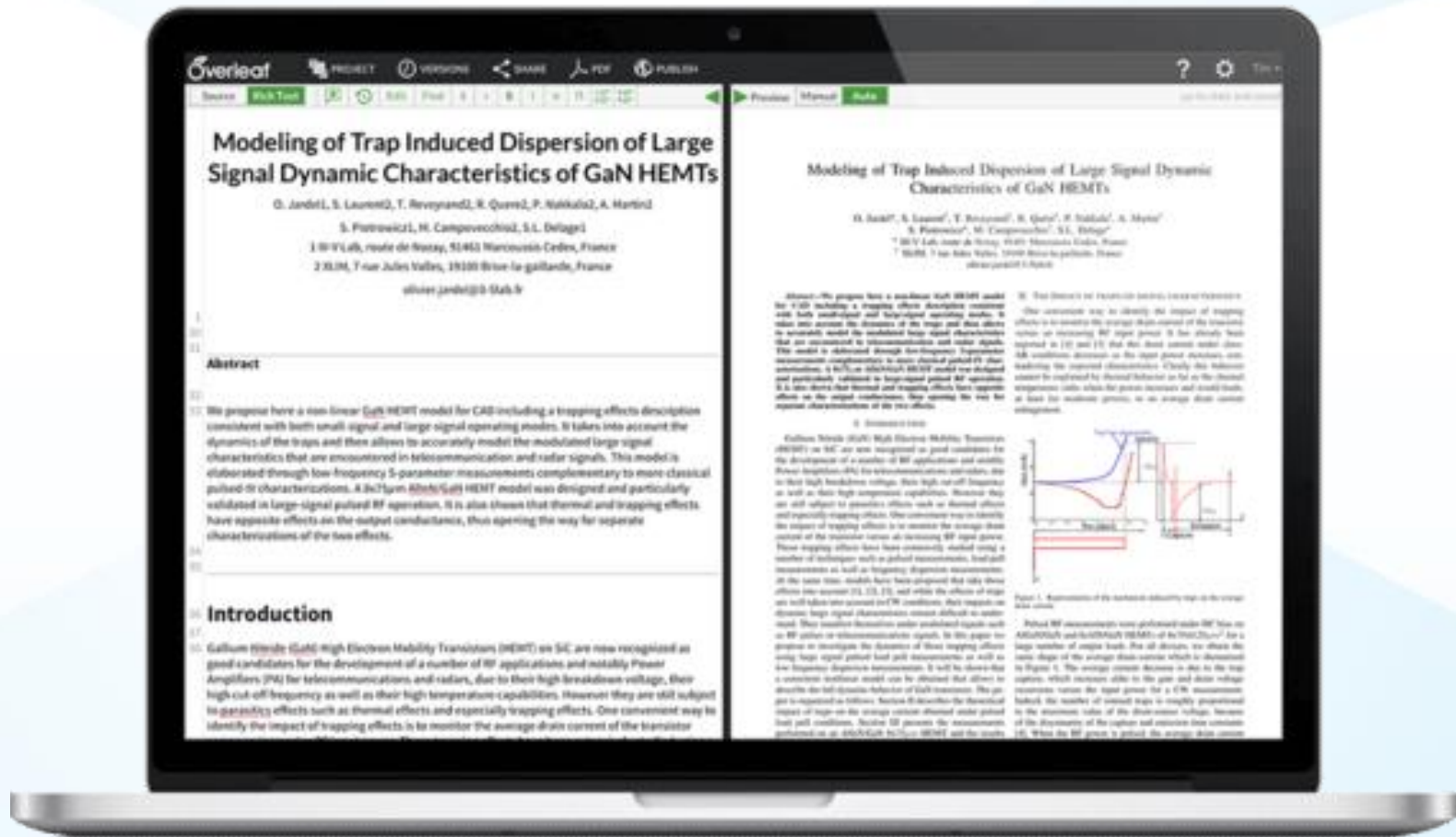
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**THANK YOU!**

Eszter Lukács

IEEE Client Services Manager - Europe

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