

IEEE TCSIM Newsletter

Quarterly Newsletter- Issue 20 – 2014

Chair's Message by Dr. Dave Cavalcanti

Dear TCSIM Colleagues,

After serving two terms as TCSIM Chair, it is time for me to pass the ball to another colleague. It's been a privilege to serve the TCSIM community. Many thanks are to all the volunteers, and especial thanks to the executive committee members and our newsletter editorial team for their commitment and support. I'm sure the TCSIM will be in good hands under the new leadership and I look forward to continuing working with you.

I encourage you all to participate in the upcoming elections, and more importantly, support the new TCSIM leadership in their journey to strengthen our community.

Editorial Board

Dr. Mostafa El-Said, Editor-in-Chief
Dr. Kaushik Chowdhury, Editor
Dr. Chittabrata Ghosh, Editor
Dr. Tommaso Mazza, Editor

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TCSIM Chair Election

The TCSIM Committee is due for a TC Chair election. The two candidates for the TCSIM Chair position are:

- Kaushik Chowdhury [Biosketch and Position Statement](#)
- Tommaso Mazza [Biosketch and Position Statement](#)

The electronic ballot will be distributed to all TCSIM members. The election will be open from Monday, September 22 - Monday, October 13 and the new Chair start date will be November 1.

Please note:

- Only CS Members who are also TCSIM Members can vote. ** To cast your vote, you will need your IEEE CS Member number. To obtain a misplaced number, please visit: https://supportcenter.ieee.org/app/answers/detail/a_id/353/session/L3RpbWUvMTM3NTc0NDYxMi9zaWQvdXlxcVAXeGw%3D
- To ensure your TC membership is valid and up to date, please log in to your IEEE Web Account and check your membership status: <https://www.ieee.org/profile/public/login/publiclogin.html>
- You may vote only one time.
- Please, vote here: <https://www.surveymonkey.com/s/LY2RF7T>

If you have trouble voting, please contact T&C Senior Program Specialist, Brookes Little (eblittle@computer.org).

The TCSIM Executive Committee would like to thank Dr Dave Cavalcanti for his outstanding leadership and contribution to the IEEE TCSIM Community.

EYE ON IT Current Industry Trends

Simulation has been increasingly used in difficult and challenging scenarios, in which real world data is hard to obtain, or experiments may not be safely conducted. In this containing series, we will place a spotlight on some of the ways and recent research through which computer simulations are aiding systems design and solving some of the practical problems facing the world today. This issue covers the following areas:

Satellites and Simulations Track Missing Methane

How much methane do emissions from oil and gas extraction, herding livestock, and other human activities in the United States add to the atmosphere each year? The U.S. Environmental Protection Agency has its set of figures. But according to two studies published recently by separate research groups at Stanford University, the government's greenhouse gas inventory doesn't fully account for methane leaked as natural gas is extracted, transported, and stored. This is a big deal, say the researchers, because underestimating the effect of natural gas on the greenhouse effect may be steering U.S. climate and energy policy in the wrong direction. This leads to a question we never thought we'd ask: Does natural gas contribute just as much to global warming as coal?

http://spectrum.ieee.org/energy/fossil-fuels/satellites-and-simulations-track-missing-methane/?utm_source=energywise&utm_medium=email&utm_campaign=032614

Cities reluctant to reveal whether they're using fake cell tower devices

For some time now, the American Civil Liberties Union (ACLU) has been on a [quest to better understand the use and legality of "stingrays."](#) These devices, which are also known as international mobile subscriber identity (IMSI) catchers, or fake cell towers, can be used to track phones or, in some cases, intercept calls and text messages.

<http://arstechnica.com/tech-policy/2014/03/cities-reluctant-to-reveal-whether-theyre-using-fake-cell-tower-devices/>

Google Wireless: Google Fiber cities could get mobile service, but to what end?

Google is already an Internet service provider through its Google Fiber service, piping Gigabit Internet to homes and businesses in a handful of cities across the US. According to a report from [The Information \(paywall\)](#) the company has been considering supplementing Google Fiber's home Internet access with a wireless cellular service. Google's plan isn't to build towers, but rather to become a Mobile Virtual Network Operator (MVNO)—basically a middle man who buys service from one of the "big four" carriers at wholesale prices and resells it to consumers under its own brand.

<http://arstechnica.com/gadgets/2014/04/google-wireless-google-fiber-cities-could-get-mobile-service-but-to-what-end/>

U.S. Department of Transportation Announces Decision to Move Forward with Vehicle-to-Vehicle Communication Technology for Light Vehicles

The U.S. Department of Transportation's (DOT) National Highway Traffic Safety Administration (NHTSA) announced today that it will begin taking steps to enable vehicle-to-vehicle (V2V) communication technology for light vehicles. This technology would improve safety by allowing vehicles to "talk" to each other and ultimately avoid many crashes altogether by exchanging basic safety data, such as speed and position, ten times per second.

<http://www.nhtsa.gov/About+NHTSA/Press+Releases/2014/USDOT+to+Move+Forward+with+Vehicle-to-Vehicle+Communication+Technology+for+Light+Vehicles>

Why "Big Data" Is a Big Deal (March- April 2014 Harvard Magazine)

DATA NOW STREAM from daily life: from phones and credit cards and televisions and computers; from the infrastructure of cities; from sensor-equipped buildings, trains, buses, planes, bridges, and factories. The data flow so fast that the total accumulation of the past two years—a zettabyte—dwarfs the prior record of human civilization. "There is a big data revolution," says [Weatherhead University Professor Gary King](#). But it is not the *quantity* of data that is revolutionary. "The big data revolution is that now we can *do* something with the data."

<http://harvardmagazine.com/2014/03/why-big-data-is-a-big-deal>

The Explosion of the IoT for Business

The Internet of Things market, by many estimates, is expected to explode. According to a report issued at the Trillion Sensors Summit, held last October at Stanford University, the number of connected machines and devices will be about 1 trillion by the year 2022. Ultimately some segments of the IoT will be more profitable than others, and those are going to be attractive targets. The biggest profit potential of the IoT may not be in the things themselves, but in the data they can provide and additional services that they can enable.

<http://theinstitute.ieee.org/ieee-roundup/opinions/ieee-roundup/the-explosion-of-the-iot-for-business>

Emergency SSL/TLS Patching Under Way

A "Heartbleed" flaw revealed in the OpenSSL library leaks the contents of memory, including passwords, source code, and keys.

<http://www.darkreading.com/vulnerabilities---threats/emergency-ssl-tls-patching-under-way/d/d-id/1204282>

US Energy Efficiency Market

The report breaks down building efficiency subsectors into the categories of environmental design, HVAC upgrades, lighting, water heating, district heating, demand response and building energy management software. Taken together, these subsectors represented \$43.9 billion in U.S. revenues and \$150 billion worldwide. It would be premature to draw any definitive conclusions from the data in this latest AEE report. But the analysis does suggest once again that building efficiency is a much bigger force that people assume. And if investment keeps its current pace, it will likely continue to rival the more visible clean electricity sector.

<http://www.greentechmedia.com/articles/read/Building-Efficiency-Was-Worth-More-Than-Clean-Electricity-Generation>

Call for Papers

IEEE TCSIM Newsletter



The IEEE TCSIM Newsletters will publish short technical papers. The submissions should emphasize modeling, design, and analysis of computational methods for simulations and its applications in various areas, including, but not limited to, computer science, engineering, communications, and simulation applications. The submissions are invited covering, but not limited to, the following topics:

- Simulation architecture modeling and prototyping
- Simulation algorithm design, implementation, and analysis
- Simulation complexity in computing
- Parallel and distributed simulation
- Design and usage of simulation tools
- Real-time simulation monitoring
- Simulation tools for communications and networks
- Simulation of computer systems and applications
- Agent-based simulation tools focus on the use of agents in engineering, human and social dynamics, military applications
- Systems and process simulation
- Simulation of ubiquitous networking and computing
- Simulation of transportation systems
- Automotive simulation applications
- Building and energy management simulations
- Machine learning
- Virtual reality systems
- Knowledge and data systems
- Systems optimization
- Web-based simulation and applications
- Department of Defense Architecture Framework (DoDAF)-based network simulations
- DoDAF-based vulnerability assessment

Submission

All papers must be submitted to elsaidm@gvsu.edu in four pages or fewer, including all figures, tables, and references. A manuscript submitted for publication should be original work that should not have been previously published and should not be under consideration for publication elsewhere. If an author uses charts,

photographs, or other graphics from previously printed material, he/she is responsible for obtaining written permission from the publisher to use the material in his/her manuscript. The maximal number of figures and tables are five, and the number of reference is limited to ten. Submissions exceeding this length will be returned without review. Papers should use 7.875in x 10.75 in (20cm x 27.30cm) trim size and the IEEE transactions two-column format in 10-pt. font. Please submit electronically in PDF file, and ensure that the submitted file can be viewed in Acrobat Reader 8.0. No hard copy is necessary. A standard IEEE copyright release will also be required before full acceptance.

All papers must include the authors' affiliation and e-mail addresses of all authors. All papers will be fully refereed for accuracy, technical content, and relevance. Contact Dr. El-Said at elsaidm@gvsu.edu with any questions concerning the paper submission and review process, or questions regarding the relevance of a paper to the IEEE TCSIM Newsletters.

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