

Technology, Cybersecurity and Policy (TCP)

Roadmaps for Risk Management

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Resilience and Reliability



Invited Talk
Boulder, CO
Oct. 17, 2022

A Writer's Life –



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 Cloud Security, RBAC, Identity Management,
 Vehicular Networks
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Citation indices	All	Since 2012
Citations	1148	1088
h-index	7	6
i10-index	7	4

Co-authors [View all...](#)
 Georgios Karagiannis, D. Richard (Rick) Kuhn

Title	1–20	Cited by	Year
Vehicular networking: A survey and tutorial on requirements, architectures, challenges, standards and solutions		705	2011
<small>G Karagiannis, O Altintas, E Ekici, G Heijenk, B Jarupan, K Lin, T Weil IEEE communications surveys & tutorials 13 (4), 584-616</small>			
Adding attributes to role-based access control		306	2010
<small>DR Kuhn, EJ Coyne, TR Weil Computer 43 (6), 79-81</small>			
ABAC and RBAC: scalable, flexible, and auditable access management		53	2013
<small>E Coyne, TR Weil IT Professional 15 (3), 0014-16</small>			
Final report: Vehicle infrastructure integration (VII) proof of concept (POC) test—Executive summary		25	2009
<small>R Kandarpa, M Chenzaie, M Dorfman, J Anderson, J Marousek, ... US Department of Transportation, IntelliDrive (SM), Tech. Rep</small>			
Service management for ITS using WAVE (1609.3) networking		14	2009
<small>T Weil GLOBECOM Workshops, 2009 IEEE, 1-6</small>			
Final Report: Vehicle Infrastructure Integration Proof-of-Concept Results and Findings-Infrastructure		11	2009
<small>R Kandarpa, M Chenzaie, J Anderson, J Marousek, T Weil, F Perry, ...</small>			



DEPARTMENT: FROM THE EDITORS

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IT Risk and Resilience— Cybersecurity Response to COVID-19

Tim Weil, *SecurityFeeds LLC*
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The rapid and worldwide spread of the coronavirus and its illness known as COVID-19 has made huge impact on almost everything has taken us all by surprise. We all are now experiencing a major unprecedented and unexpected global public health crisis. This pandemic has also triggered huge social upheavals, disrupted almost every industry, and impacted the life and work of everyone in almost every country. Businesses and educational institu-

of recent developments in IT, as outlined in Table 1. It is very likely that even after we successfully emerge from the crisis, business will not be “as usual” and we may continue new ways of working and offering various services. The COVID-19 epidemic impacted IT too, primarily positively, benefiting IT industry and IT professionals and serving public goods. However, there are a few negative impacts as well, such as increased and novel





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Adding Attributes to Role Based Access Control reaches 500 citations on Google Scholar - https://lnkd.in/ew_BQaF

Adding attributes to role-based access control

Authors D Richard Kuhn, Edward J Coyne, Timothy R Weil

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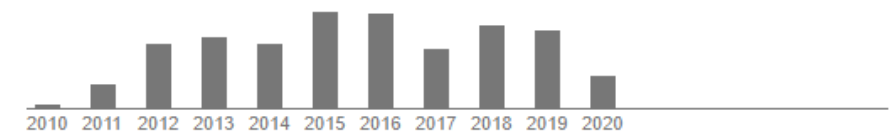
Pages 79-81

Publisher Institute of Electrical and Electronics Engineers, Inc., 3 Park Avenue, 17 th Fl New York NY 10016-5997 United States of America

Description Nat'l Computer Security Conf., NSA/NIST, 1992, pp. 554-563; R. Sandhu et al., "Role-Based Access Control Models," Computer, 29 (2), 1996, pp. 38-47), also known as RBAC, provides a popular model for information security that helps reduce the complexity of security administration and supports review of permissions assigned to users. This feature is critical to organizations that must determine their risk exposure from employee IT system access.

RBAC has frequently been criticized for the difficulty of setting up an initial role structure and for inflexibility in rapidly changing domains. A pure RBAC solution may provide inadequate support for dynamic attributes such as time of day, which might need to be considered when determining user permissions. To support dynamic attributes, particularly in large organizations, a "role explosion" can result in thousands of separate roles being fashioned for different collections of permissions. Recent interest in attribute-based access control (ABAC) suggests that attributes and rules could either replace RBAC or make it more simple and flexible.

Total citations Cited by 500





Resilience and Reliability

Guest Editors' Introduction

IT Pro Special Issue on Communications Recovery and Resilience—Editor's Column

Tim Weil
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Bhuvan Unhelkar
University of South Florida

John Callahan
Veridium IP, Ltd.

Jason W. Rupe
CableLabs, Louisville

Keith Sherringham
EY

■ **COMMUNICATION RECOVERY AND** resiliency is a topic of great concern in current times as disasters have taken a greater toll on society. The current COVID-19 pandemic has made us more dependent on communications networks and this has increased the premium placed on technologies and its operations. Communications networks must be resilient, in support of various technologies during business disruptions, disaster recovery, and pandemic events.

Recovery and resilience are two sides worth exploring here: 1) the needs and challenges with

Four papers focus on improving communication networks to make them more resilient, which are as follows.

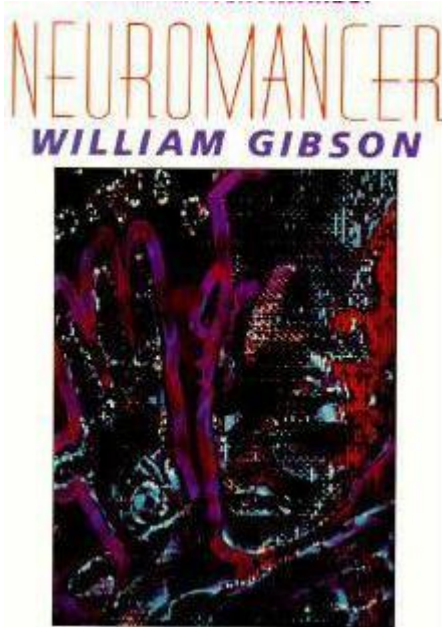
- The paper titled "Preference Biased Edge Weight Assignment for Connectivity Based Resilience Computation in Telecommunication Networks" presents an edge weight approach for providing a fairer measure of resilience.
- In the paper "A Design for Resilient Datacenter Networks," the authors discuss failures in data centers that impact service and provide

<https://www.computer.org/csdl/magazine/it/2020/06/09250314/1oxkJTulsMg>

Cyberspace – Our Point of Departure – Wired Magazine (June '08) -

<https://www.wired.com/2008/05/pentagon-define/>

26 YEARS AFTER GIBSON, PENTAGON DEFINES 'CYBERSPACE'



"More than two decades after novelist [William Gibson](#) coined the term cyberspace as a '[consensual hallucination](#)' of data... the Pentagon has come up with its own definition,"* *[Inside Defense](#) reports. "A May 12 'for official use only' memo signed by Deputy Defense Secretary Gordon England... offers a 28-word meaning for the term." It is decidedly "less poetic" than Gibson's

Cyberspace, England writes, is "a [global domain within the information environment consisting of the interdependent network of information technology infrastructures, including the Internet, telecommunications networks, computer systems, and embedded processors and controllers.](#)" *

*It is a far cry from the prose Gibson used in his 1984 novel "[Neuromancer](#)" to describe cyberspace: "A graphic representation of data abstracted from banks of every computer in the human system. Unthinkable complexity. Lines of light ranged in the nonspace of the mind, clusters and constellations of data. Like city lights, receding."

How we got to the cloud

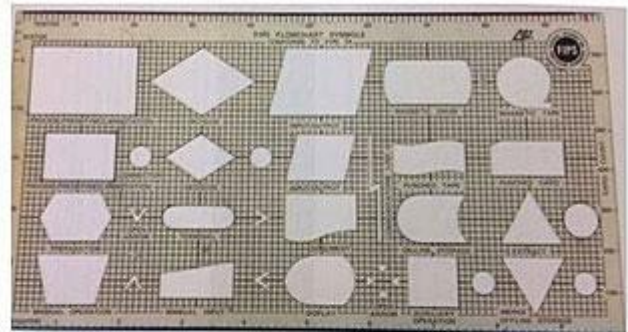
A look at the people, policies and technologies that have transformed federal IT in the past 25 years

The evolution of federal IT

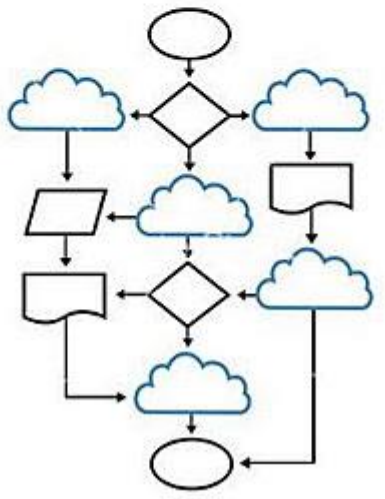


What's changed with Cloud Computing?

Before



After



Global transformation caused by COVID-19

IT Professional
Technology Solutions for the Enterprise

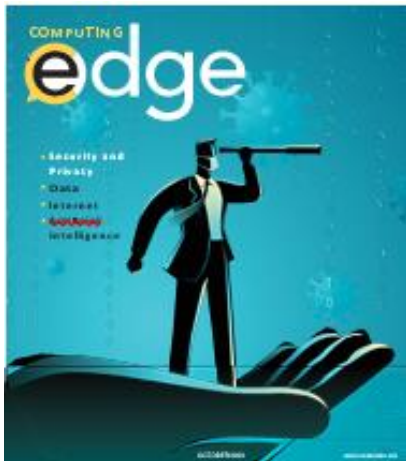
VOLUME 22 NUMBER 3 MARCH 2020



Artificial Intelligence (AI) in Agriculture

IEEE

THE COMPUTER SOCIETY
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Abstract

The rapid and worldwide spread of the coronavirus and its illness known as COVID-19 has made huge impact on almost everything has taken us all by surprise. We all are now experiencing a major unprecedented and unexpected global public health crisis. This pandemic has also triggered huge social upheavals, disrupted almost every industry, and impacted the life and work of everyone in almost every country. Businesses and educational institutions are closed, many employees are forced to work from their homes, supply chains have been disturbed, people are being required to self-isolate, and most travel, in-person meetings, and conventions have been banned. These disruptions could continue for months, and the resulting economic, business, and social impact will last for years.

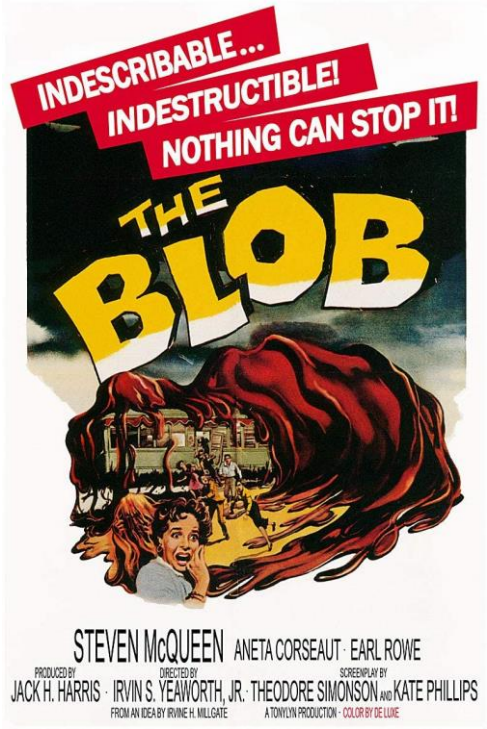


Global transformation caused by COVID-19

Industry	Response/Impact	Response	Underlying technology/operation
Education	Widespread closure of educational institutions; access to labs is restricted; projects have been mothballed; and fieldwork interrupted	Virtual learning environment (online teaching, presentation, assessment, and consultation); convocation online	Online video conferencing software, virtual labs on cloud
Healthcare	Overcrowded hospitals, inability to meet the demands on them	Contact tracing, forecasting resource requirements, allotment of scarce resources based on a patient's survivability, COVID-19 vaccine development, telehealth (online consultation with a doctor or medical professional); automated diagnosis	AI, ML, cloud computing, chatbot
Business	Closure of business, avoidance of in-person retail shopping	Adherence to social distancing, services online, work from home	Chatbot, drone delivery, online meeting software, virtual office/desktop, remote access to work
Industry	Closure of business, avoidance of in-person retail shopping	Work from home, remote operations, automation and autonomous operation	Robots, automation, 3-D printing
Retail	Stores closed, only online service, avoidance of retail shopping	Online shopping, home delivery	The Web, online payment, contactless payment
Government	Spike in demands from citizens for assistance, disruption to normal operations	Migration to online services	Cloud, the Web, online meeting application
Entertainment	Entertainment venues (parks, cinema) closed, sports without spectators	Viewing online	Audio and video streaming, virtual reality
Personal life and social interaction	Lockdown	Indoor activities	Phone, audio and video chats, streaming, online gaming
Spirituality and religious practices	Places of worship closed	Online participation, prayers from home, worship through livestream	Audio and video streaming, virtual reality
Conferences	In-person conferences banned; virtual conferences	Online presentation and discussion	Video streaming, virtual conference software



Big Scary Monsters - Global transformation caused by COVID-19



The Blob is an amorphous mass of alien goo that appears in the 1958 film of the same name. Appearing as nothing more than a mass of red gelatin, this creature possesses animalistic intelligence, acting purely on the instinct to feed. It feeds on flesh and gains mass as it consumes other creatures

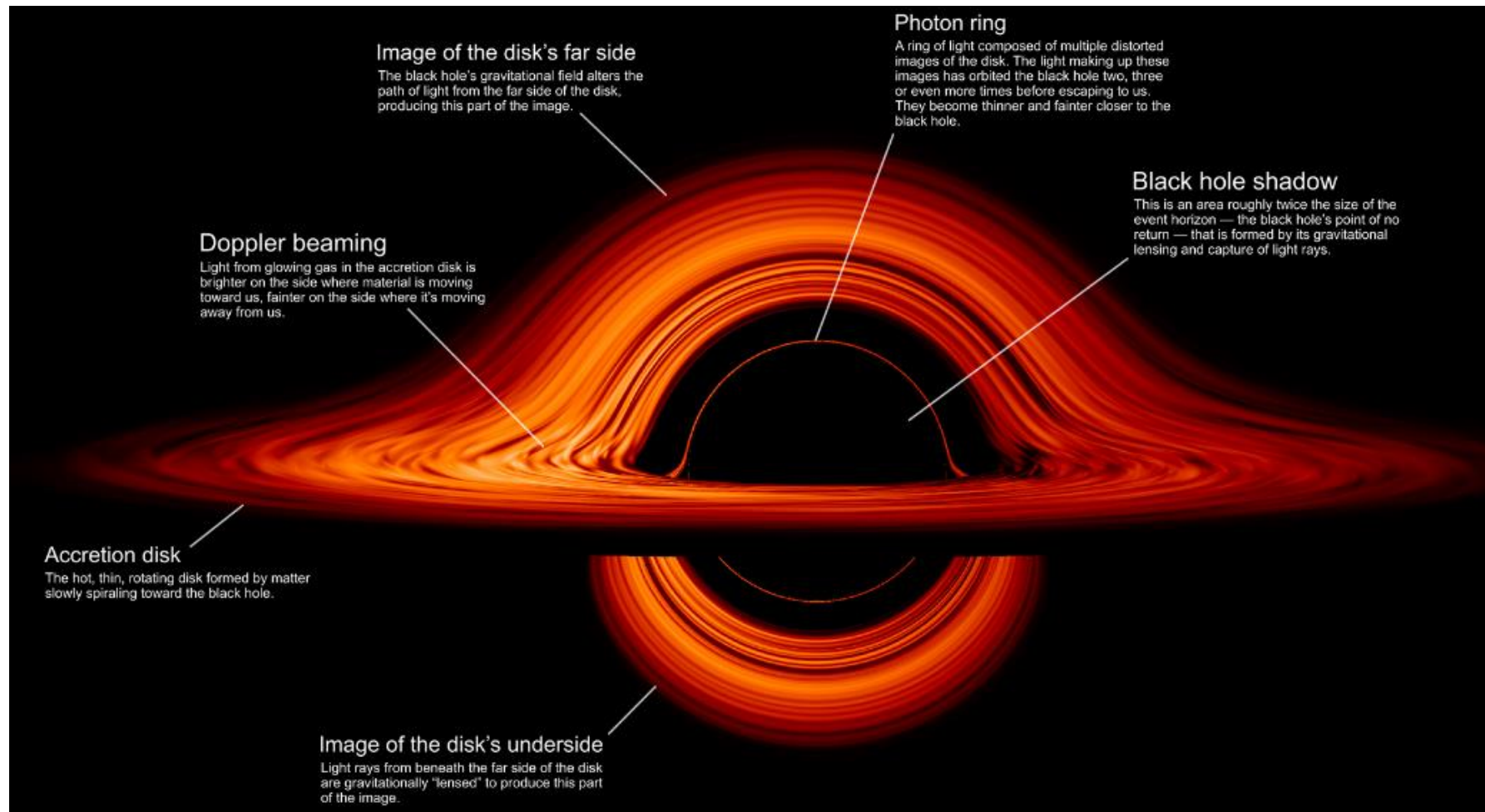


Them While investigating a series of mysterious deaths, Sergeant Ben Peterson finds a young girl agent Robert Graham and scientist Dr. Harold Medford), he discovers that all the incidents are due to giant ants that have been mutated by atomic radiation. Peterson and Graham, with the aid of the military, attempt to find the queen ants and destroy the nests before the danger spreads.



The FUD Factor – Fear, Uncertainty and Doubt

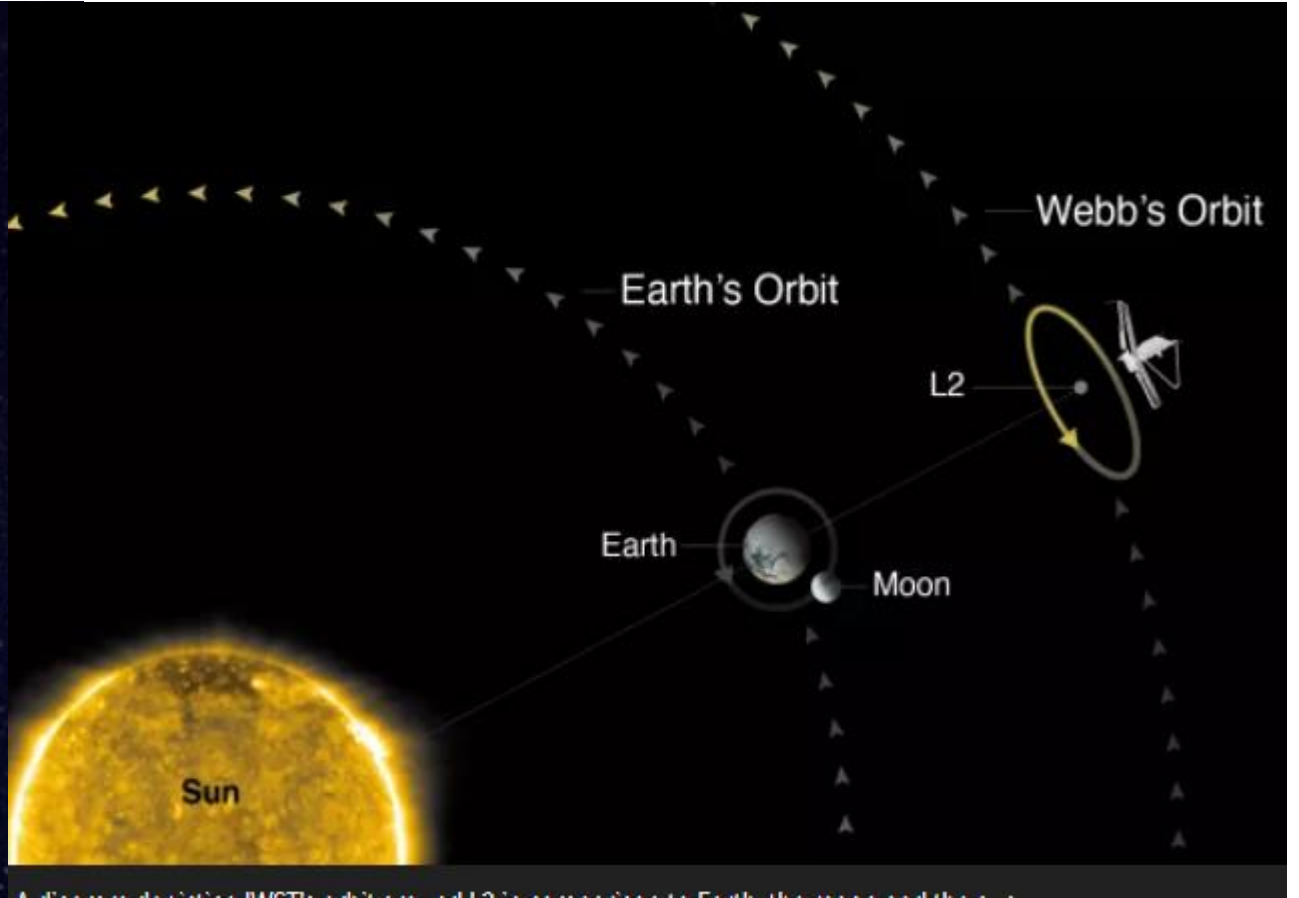
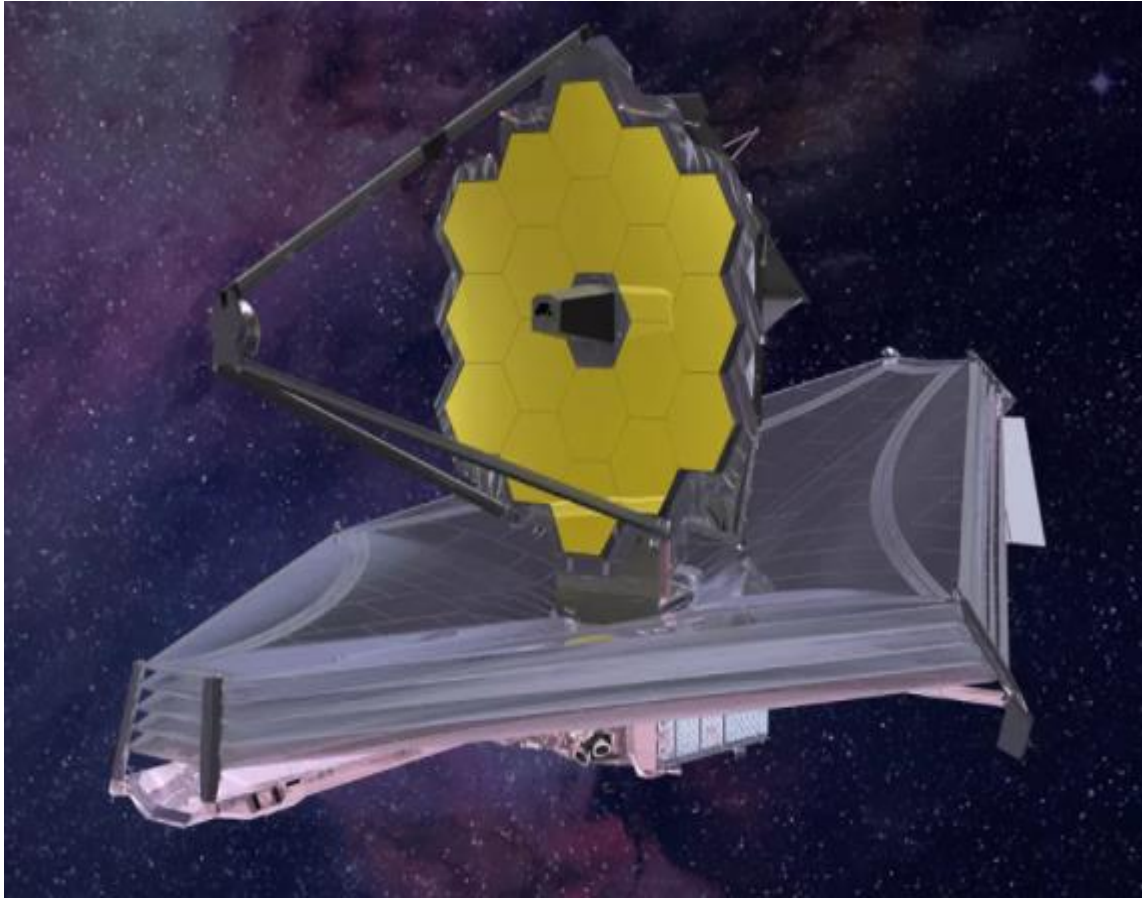




NASA Visualization Shows a Black Hole's Warped World

This new visualization of a black hole illustrates how its gravity distorts our view, warping its surroundings as if seen in a carnival mirror. The visualization simulates the appearance of a black hole where infalling matter has collected into a thin, hot structure called an accretion disk. The black hole's extreme gravity skews light emitted by different regions of the disk, producing the misshapen appearance.

<https://www.nasa.gov/feature/goddard/2019/nasa-visualization-shows-a-black-hole-s-warped-world>



<https://www.space.com/james-webb-space-telescope-mission-explained>

How the James Webb Space Telescope works in pictures

The [James Webb Space Telescope](https://www.space.com/james-webb-space-telescope-mission-explained), also known as Webb or JWST, is a high-capability space observatory designed to revolutionize fields of astronomy ranging from star formation to galaxy evolution and from the very first galaxies of the universe to the properties of planetary systems. However, because JWST is a project of unprecedented complexity, the mission has struggled to launch. What had initially been proposed as a \$1 billion observatory launching in 2007 has become a \$10 billion project launching in 2021.

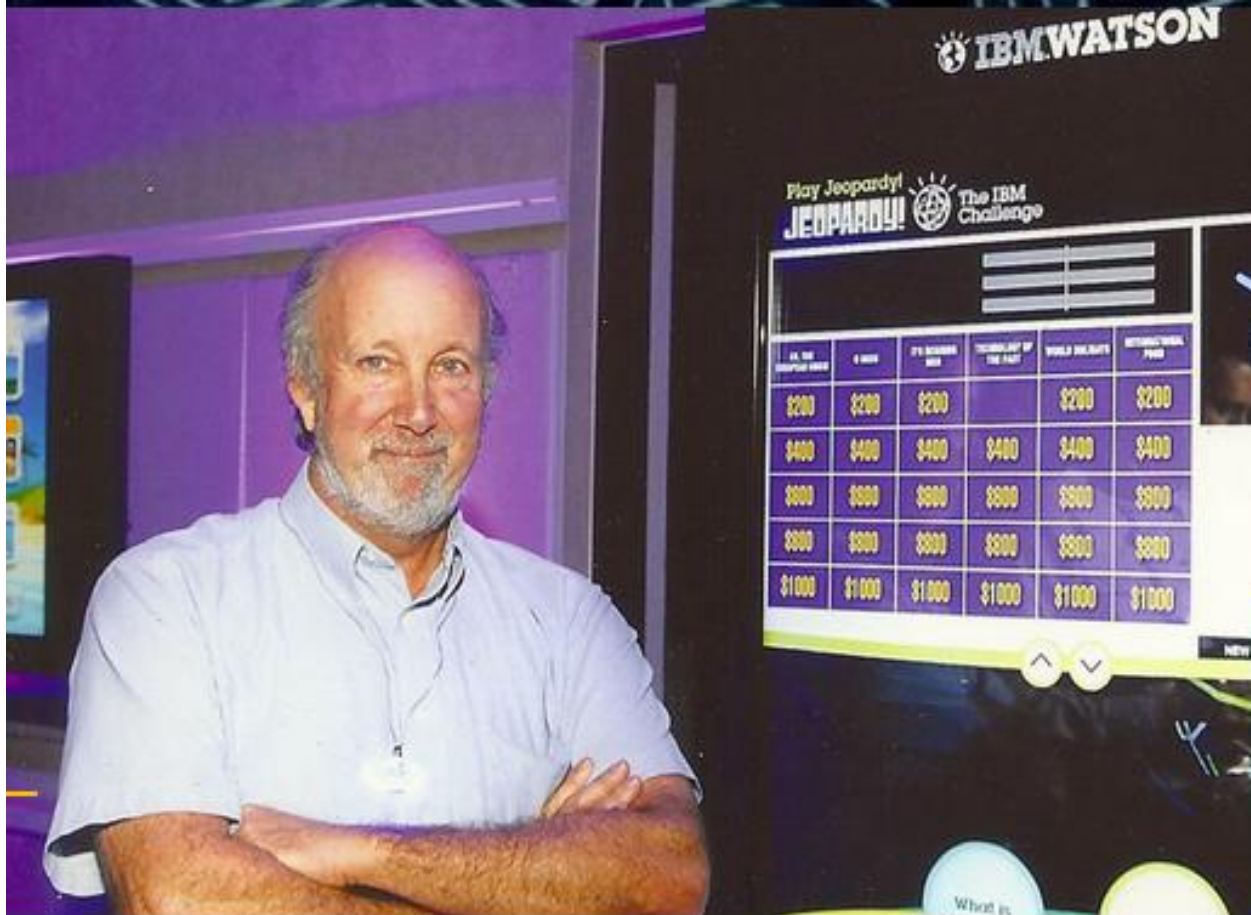
You don't need a weatherman to tell which way the wind blows.






ICT - Science & Engineering Journalism – 1984 - 2020

Thank you for joining us!



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SecurityFeeds LLC provides IT Management Consulting services

- Communications and Security Engineering
- Data Processing (Systems Engineering)
- Project and Program Management
- Risk Management (ISO 27001)

Our expertise includes Enterprise Security Architecture, Cloud Security, Program Management, and Network Engineering.

"RISK is a four-letter word"