YOUR OPPORTUNITY...
TO MAKE A DIFFERENCE | CPHC CONFERENCE
APRIL 2023

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Sunday Sprinkles – In search of the sweetness in life
https://sundaysprinklesblog.wordpress.com/

Leadership in the Digital Economy
https://rashikparmar.wordpress.com/
Three forces

Increase performance and reduce costs

Digitisation

Post Pandemic Work

Attract the best talent

Climate Emergency

Reduce CO2 and environmental impact
Digitisation
BCS Christmas Carol – 2023

Deck the halls with lines of code now tralala lalala La (JAVA !)
We can help your skills explode now tralalala LAH ( PYTHON !)

We’re the British Com-puter So-ciety - tralala lalala (PHP !)
Here to banish IT anxiety tralalala LAH, lala (and C !)
Tis the season to be coding tralala lalala (S Q L !)

Whether it’s fine or wet or snowing tralalala LAH ( and SWIFT as well !)
From AI to quantum systems, bringing our knowledge and expertise
At our range of fun-filled workshops You can learn new tech-no-lo-gies.

Maybe you’re concerned with cyber ? tralala lalala (private keys !)
Securing data through dark fibre tralalala LAH ( encrypt with ease !)

If you want to come and join us - just get in touch with the BCS
Can we help, this festive season? In ANY language - the answer’s YES!
There is an explosion in AI capabilities

<table>
<thead>
<tr>
<th>Date</th>
<th>New AI Capabilities</th>
</tr>
</thead>
<tbody>
<tr>
<td>28 Feb 2023</td>
<td>Meeting planning, Travel guides, Email summaries, Discord summaries, Prayers, Spotify music recommendations, AI tools search, Image descriptions, Code search, Task assistants, Pet images, Twitter bio</td>
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<tr>
<td>24 Feb 2023</td>
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<td>23 Feb 2023</td>
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<td>21 Feb 2023</td>
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<td>18 Feb 2023</td>
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</tr>
</tbody>
</table>

Total AI Capabilities listed on There's an AI for that.

https://theresanaiforthat.com/
Innovation
Three laws of digitisation

1. Whatever can be digitised will be
2. Digitalisation leads to free
3. Data allows new value
Applying digitisation

- Augmenting products: Edge, 5G, IoT, Robotics, AI, Cloud, Open Source
- Digitise processes: Intelligent Workflows, Natural Interfaces, RPA, AI, IoT, Cloud
- Integrate organizations: Blockchain, APIs, Intelligent Workflows
- Monetise data: APIs, Cloud Marketplaces, AI, Analytics, Quantum
- Leverage digital twin: AI, Graph DB, Cloud, Quantum, Open Data
New Competencies

- Gatherers
- Visionaries
- Theorists
- Engineers
- Righteous

https://rashikparmar.wordpress.com/2016/09/15/what-is-a-data-savvy-culture/
SUSTAINABILITY
IT sector electricity demand: the need for more power in context

Simply saying that more IT by definition means a considerable increase in CO₂ emissions, is incorrect.

Moreover, one has to look at the applications and technologies themselves. It’s clear that the increasing adoption of some technologies (and new applications built on top of them) has a different impact than others, whether it concerns Industry 4.0, enterprise IT, or more consumer-oriented applications.

Schneider Electric estimates that IT sector electricity demand will grow by 50 percent by 2035, reaching 3,200 TWh, equivalent to 5 percent Compound Annual Growth Rate (CAGR) over the next decade - evolution of IT energy demand in TWh

https://www.i-scoop.eu/sustainability-sustainable-development/it-sector-electricity-demand/
Deep and steep
Computing power used in training AI systems
Days spent calculating at one petaflop per second*, log scale

By fundamentals
- Language
- Speech
- Vision
- Games
- Other

Source: OpenAI
The Economist

Computer power used in training AI systems has exponentially increased in the era of deep learning. (source)

https://www.numenta.com/blog/2022/05/24/ai-is-harming-our-planet/
FORCES PUTTING PRESSURE ON TRUST IN TECH

MORE EXPANSIVE DEFINITION

Nine in ten respondents see technology as not just traditional computing and software, but the digital apps and social media they use to run and share their lives.

POLITICIZATION OF TECH

As the guardians of national security and the public square, tech companies are inevitably affected by nationalist currents, geopolitical dynamics, and domestic polarization.

SPLIT GEOGRAPHIES

Developed and developing markets present two different trust landscapes — either skeptical of the impact or enthusiastic about the promises of tech innovation.

LACK OF SOCIETAL LEADERSHIP

People want more than iterative product updates. They want solutions to climate change and economic dislocation and for CEOs to act with genuine concern.
10 YEAR TREND: TRUST IN THE TECH SECTOR DECLINES IN 14 OF 22 MARKETS

Percent trust in the technology sector

- Global 22
- Indonesia
- China
- India
- UAE
- Malaysia
- Mexico
- Brazil
- Argentina
- S. Korea
- The Netherlands
- Italy
- Singapore
- Spain
- Ireland
- Australia
- Russia
- France
- Germany
- UK
- Japan
- Canada
- U.S.

Distrust Neutral Trust Change, Jan 2012 to Jan 2022

Double-digit declines in 6 markets
A sustainable digital journey

Net Zero: A Digital Journey

Digital technology is essential to reducing greenhouse gas emissions to meet climate targets

Watch now
Decarbonising the CS curriculum

We recently surveyed CPHC members about their plans to address the need for low carbon and sustainable computing in the curriculum.

▪ Just under 50% indicated that their organisation has sustainability aims and ILOs that specifically relate to decarbonising or moving to a low-carbon economy in their general programmes already.

▪ Most of the activity is at University level rather than within the departments, commentary indicated there are very few departments with a rigorous full-curriculum approach to this yet.

▪ Comments suggest an opportunity to improve awareness of the drivers for increased CO2 emissions in ICT are actually coming from software, and not hardware, this is therefore not an Engineering problem.

▪ Two-thirds indicated they would value inputs from BCS in this process, and of those who would like inputs, 60% said they wanted it to be part of the accreditation.
Post Pandemic Work
What is the future of work?

New collar work
- Outcome led
- Unpredictable
- New business models

New working practices
- Agile
- Data savvy
- Creative

New Values
- Meaningful work
- Right metrics
- Inclusive
Higher Education will need to adapt to deal with changes to AI, in support for students, learning opportunities and of course assessment.

The future of learning...
How can IT rebuild trust?

Good government is no substitute for self-government.

(Mahatma Gandhi)
Culture is what happens when no one is looking.
Responsible Computing Framework

**RESPONSIBLE IMPACT**
Technologies and innovations that drive positive impact for society at large

**RESPONSIBLE CODE**
Conscious code choices that optimize environmental, social and economic impact over time

**RESPONSIBLE SYSTEMS**
Inclusive systems that address bias and discrimination driving equality for all

**RESPONSIBLE INFRASTRUCTURE**
Efficient use of available and future technology

**RESPONSIBLE DATA USAGE**
Data that is securely used in ways that drive transparency, fairness and respect for the users

**RESPONSIBLE DATA CENTER**
Data centers designed and operated with an emphasis on sustainability
DIGITAL PROFESSIONAL STANDARDS

Competent
Accountable
Ethical
Inclusive

That make digital good for society
Recognising & Celebrating Excellence

- Multi-year reform of BCS Awards, Medals & Prizes
- Recognising and celebrating people and teams who are advancing computing for the benefit of society
- Aligned to purpose, bringing our values to life, and supporting our strategic priorities.
- BCS-wide effort, progress on prizes framework (in draft), Prestigious and Academy prizes.
- Academy project partners include CPHC, UKCRC, New Lecturers Group, The Computer Journal

1. Nominate and encourage nominations for…
   - Lovelace Medal for Computing Research
   - Lovelace Medal for Computing Education
   - Roger Needham Award includes £5k prize and Lecture opportunity
   Nominations open this week, and close at 23:59 on 10th May 2023

2. Recommend candidates for…
   - Lovelace Selection Panel
   - Needham Selection Panel
   Highly credible, independent, diverse, and qualified experts

3. Promote to female students…
   - Karen Spärck Jones Lecture 6th June 2023
   Raising profiles, encouraging women studying computing.

Draft Prizes Framework

- DISCOVERY PRIZES
  Achievements in Computing Research

- EDUCATION PRIZES
  Impact in Computing Education

- PIONEER PRIZES
  Breakthroughs in Computing that accelerate progress

- BEACON PRIZES
  Excellence in the application of Computing systems

- COMMUNITY PRIZES
  Contribution to the profession, institute, and community
You are preparing future IT leaders...they will need to know...

- How will digitisation help our sustainability?
- How can we learn from best practices?
- Are we being responsible with our IT?
- Are we focusing IT in the right areas?