



International Actuarial Association
Association Actuarielle Internationale



AI: Is there a future for actuaries?

Charles Cowling
President IAA

Convention A
March 2024

AI – Is there a future for Actuaries?

1. Background to AI

- Why AI matters to us all
- What AI can already do ... and what it can't (yet!)

2. What AI might mean for Actuaries

- The future is in our hands: How might AI transform actuarial work?

3. International Perspective

- Opportunities for *Actuarial Intelligence*
- The IAA Response





The Mission of the IAA

I

Impact global stakeholders

A

Assure the reputation of the profession

A

Advance the competency of the profession



The Mission of the IAA

I

Impact global stakeholders

A

Assure the reputation of the profession

A

Advance the competency of the profession

The background of the slide is a vibrant digital cityscape. It features a grid of glowing green rectangular blocks that resemble server racks or data centers, receding into the distance. Numerous vertical streams of green light and data points fall from the top, creating a 'Matrix' effect. Various geometric shapes like triangles, squares, and diamonds, along with some text-like symbols, float in the air. The overall color palette is dominated by green and black, with bright highlights from the digital elements.

Part 1:

Background to AI

Why AI matters to us all

What AI can already do ... and what it can't (yet!)

Background:

Putting Gen-AI in context

The dawn of useful AI – a “once in a decade” moment

1980



Excel

1990



Email

2000



Google

2010



iPhone

2020



Gen-AI

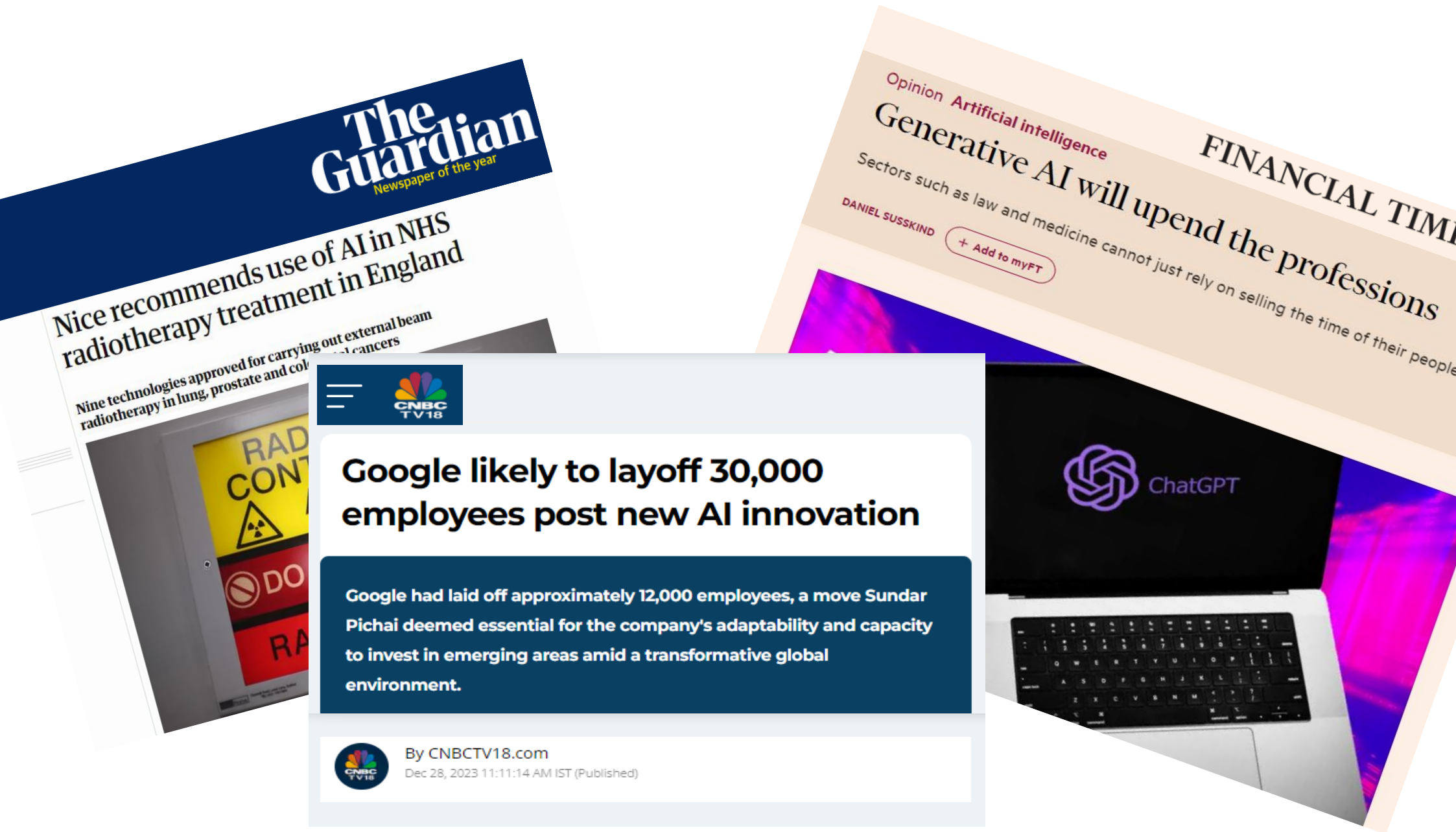
We are already interacting with AI every day

We are already interacting with AI every day



AI in the headlines

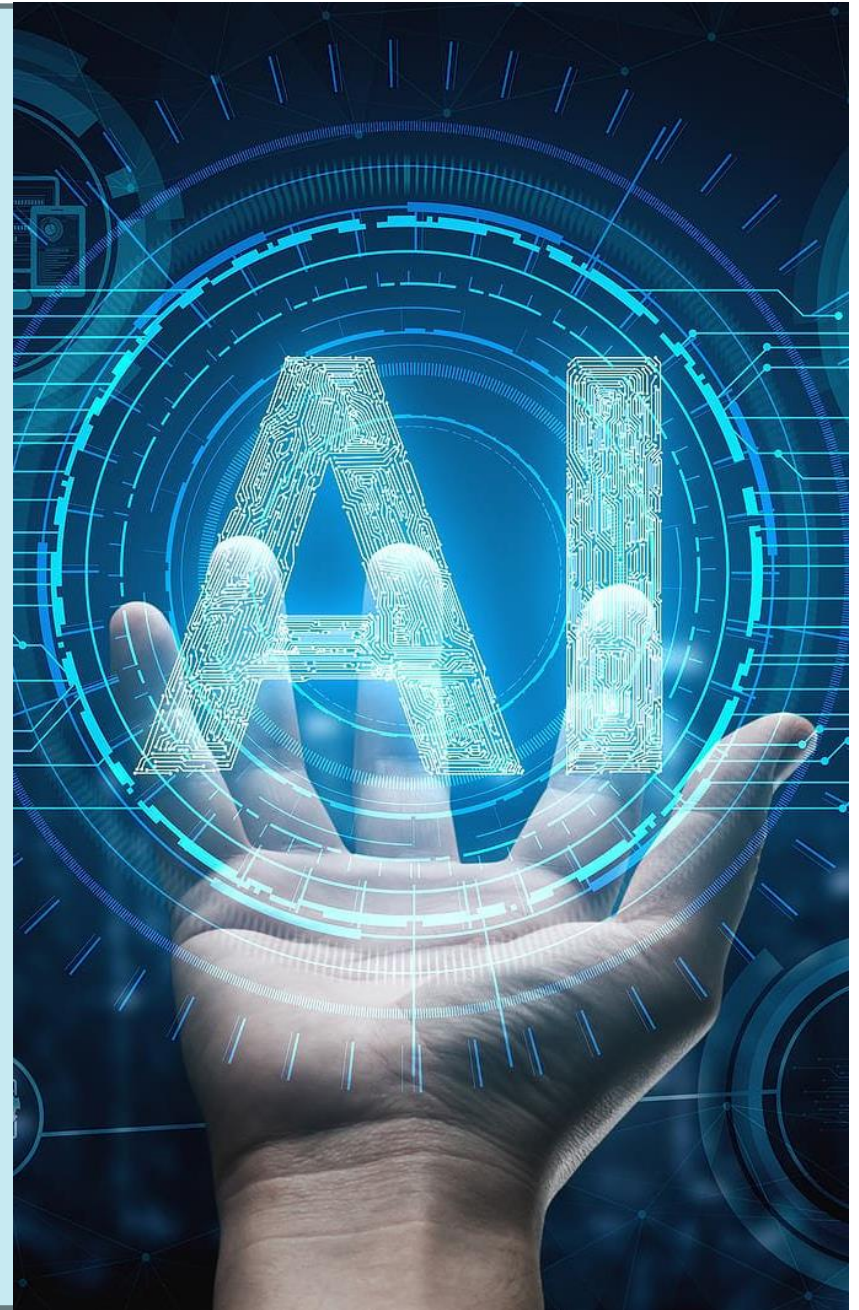
There is rarely a newspaper without an AI headline



What can AI already do?

GPT-4 can already:

- Perform rudimentary drafting tasks
- Pass the general bar exam!
- Write computer code faster and more reliably than humans – *“Co-Pilot”*
- Ace *“SAT”* tests that head teachers said they found *“personally challenging”*
- Do maths ... sometimes!



Part 2:
What AI means for Actuaries



The AI tidal wave...



Is anyone able to define AI?

What are the risks?

And how could actuaries help to mitigate them...?

Data privacy &
cyber security

Errors

© / legal risk

Human touch &
people insight

Statistical bias

Explainability

Regulatory risk

“People risk”
during disruption

TECHNOLOGY

ChatGPT will always have bias, says OpenAI boss

Sam Altman argues the world will never agree on chatbot's politics



Sam Altman said that there would never be a version of GPT-4 that is not biased. JASON REDMOND/AFP/GETTY IMAGES

RETAIL OCTOBER 11, 2018 / 12:04 AM / UPDATED 5 YEARS AGO

Amazon scraps secret AI recruiting tool that showed bias against women

By Jeffrey Dastin

8 MIN READ



SAN FRANCISCO (Reuters) - Amazon.com Inc's AMZN.O machine-learning specialists uncovered a big problem: their new recruiting engine did not like women.

Department for
Science, Innovation
& Technology

 **AI SAFETY
SUMMIT**
HOSTED BY THE UK
1-2 NOVEMBER 2023

Capabilities and risks from frontier AI

A discussion paper on the need for further research into AI risk



From Artificial Intelligence to Actuarial Intelligence

What are the opportunities?

Enhanced Decision Making

- Analysing large data sets; identify patterns, trends, correlations

Personalisation and Customer Experience

- Customer preferences and tailored recommendations

Advanced Analytics and Prediction

- Machine Learning; complex data sets, predictive analytics, risk analysis

Innovation and Competitive Advantage

- Development of new products and services

Improved Efficiency and Resource Optimisation

- Optimise processes, streamline workflows, efficient resource allocation

Enhanced Customer Support

- Virtual assistants, round the clock customer support

Part 3:

International Perspective

▲ \$ 1.105.97

825 246 6263 22
5673 32673 2672
LMXVV WXLW



▲ \$ 768

01 03 04 06 05 00
12 14 16 18 19 12 11
36 35 39 30 33 38 31

744 005 5135 5951
1248 1396 9754 345 9612
4562 2992 1556 4661

2 8756 3221 8546 8964
6359 44 98 31 21 875

825 24
5673 3
LMXVV W



2340 09340 934
IUUSS TU



From Artificial Intelligence to Actuarial Intelligence

Global Opportunities





Artificial Intelligence → Actuarial Intelligence

Opportunities – New Roles

Frank Chang

- Lead Actuary, Google, 2012
- Vice President, Applied Science, Uber

Toby Hall

- Chief Data Officer, Delta Dental of Michigan, 2012
- President & CEO, Roosevelt Innovations

Jacky Ng

- Chapter Lead Data Science APAC, Advanced Analytics CoE, Swiss Re,

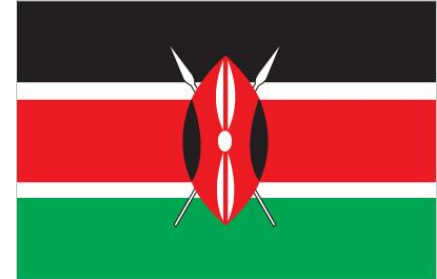
Dorothy Andrews

- Senior Behavioral Data Scientist, National Association of Insurance Commissioners

Alice Locatelli

- Managing Director - Technology and Innovation, Society of Actuaries

AI and Machine Learning as opportunities to improve insurance penetration in Africa



Empowering Small Holder Farmers in Kenya and Ghana – Dr J Olukuru





Quantium – World leader in Data Science and Artificial Intelligence



Founded by an actuary, Adam Driussi, in 2002

We bring expertise in two core domains to make the most of opportunities in the ‘big data world’

Data science

- *Translating raw data into actionable insight*
- *Data cleansing and curation*
- *Data ecosystem*
- *Data monetisation*
- *Applied analytics*

Artificial intelligence

- *Build transformative, data-powered solutions*
- *Decision support tools*
- *Decision engines*
- *Machine learning*

2/3rds of Australian actuarial students are specialising in data analytics

>50% of younger actuaries (age<35) see Data Science as their primary or secondary practice area.



From Artificial Intelligence to Actuarial Intelligence

IAA Response – AI Task Force & Work Streams

- **Professionalism and Ethics** - Developing guidelines and principles for actuaries
- **Education** - Developing enhanced curricula and training modules to include AI
- **Changing role of Actuaries** - Developing basic definitions of AI; areas where AI can augment actuarial work; encouraging development of appropriate actuarial expertise
- **Governance** - Monitoring and evaluating governance frameworks, policies, and regulations; engaging with regulators, standard-setting bodies, and policymakers
- **Innovation** - Cultivating a growth mindset among actuaries



From Artificial Intelligence to Actuarial Intelligence

IAA Task Force – Global Summit

Established work streams

- Gathering experts, including non-actuaries
- 100+ volunteers from around the world

Global Summit

- First Global Actuarial Summit on AI, Singapore, 4th/5th April 2024
- Bring experts together; drive activity; share progress, ideas and expertise; establish global network
- Expert chair(s)/speaker(s), including governments / regulators
- Broadcast/record sessions

End 2024 Deadline

- Initial project work
- Propose follow-on work



Is there a future for Actuaries? Maybe, maybe not ... but ...

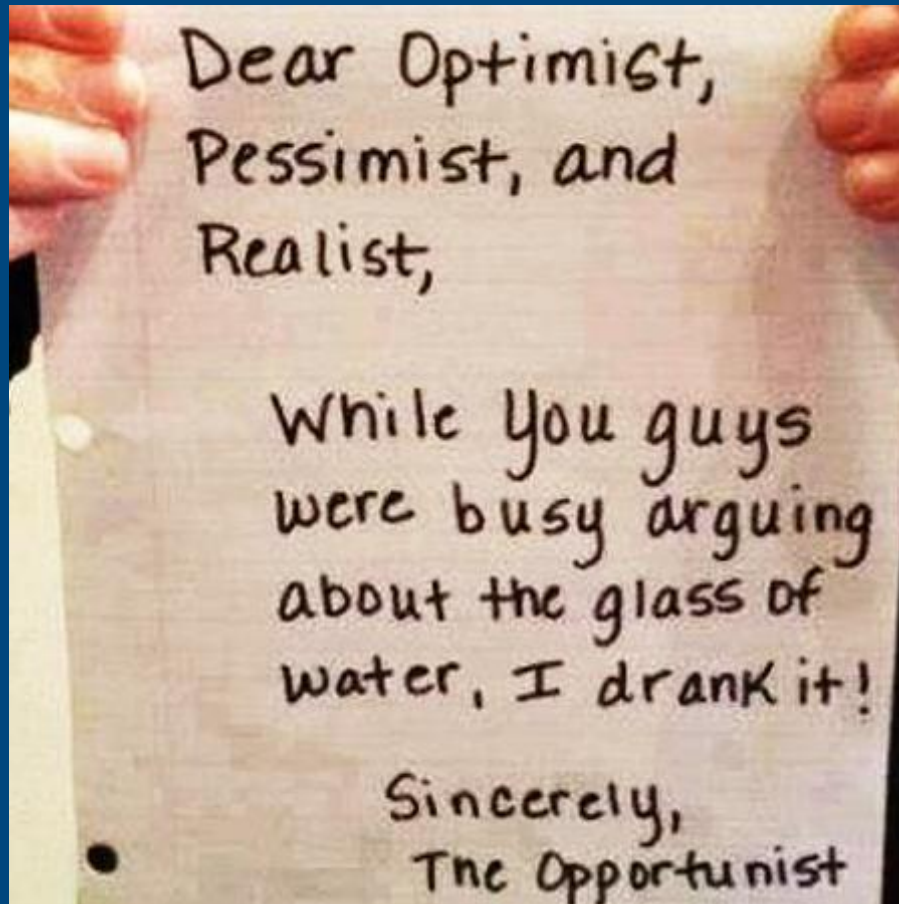
Actuaries with AI
will replace
Actuaries without AI

[Four Futures for Actuaries in the Wake
of AI - Actuarial Review Magazine
\(casact.org\)](#)





International Actuarial Association
Association Actuarielle Internationale



Any Questions



International Actuarial Association
Association Actuarielle Internationale
1203-99 Metcalfe, Ottawa ON K1P 6L7 Canada
Tel: +1-613-236-0886
Email: secretariat@actuaries.org
www.actuaries.org