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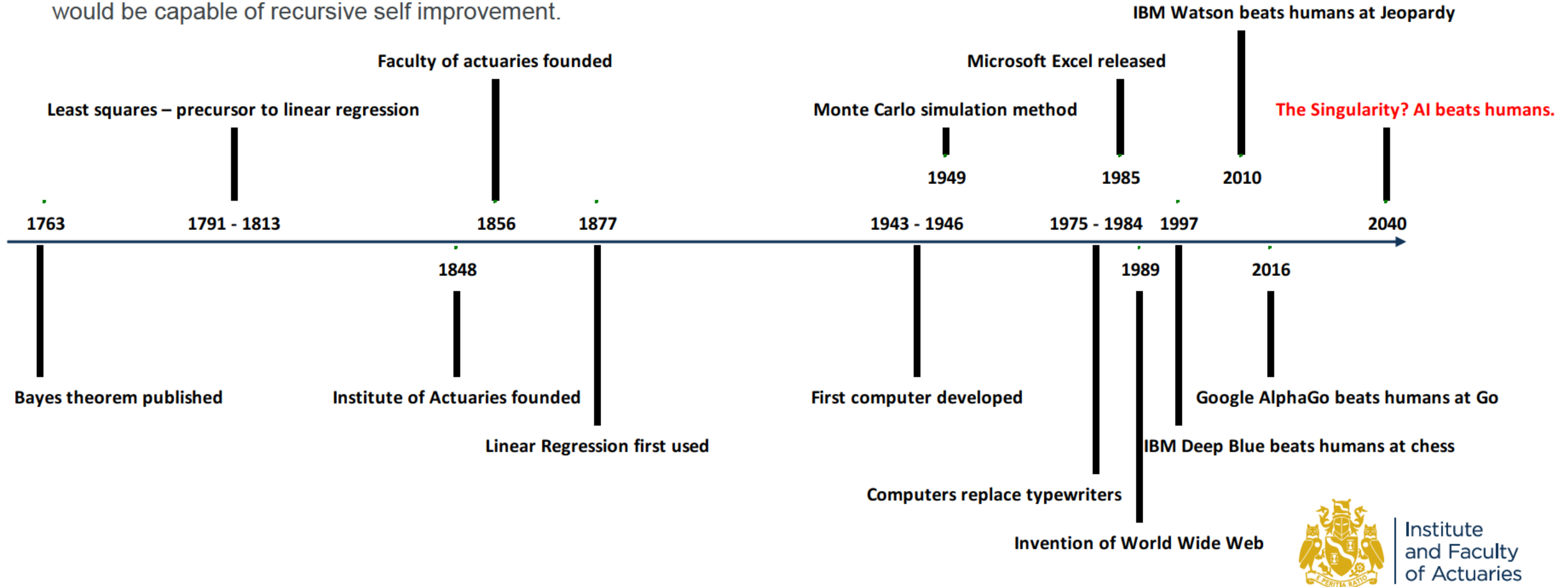
Modelling Analytics and Insights from Data (MAID)

Alexander Hanks, EY



The singularity might be science fiction - but data science is a reality!

The ever accelerating progress of technology has led to speculation of a singularity - a hypothetical event in which artificial intelligence would be capable of recursive self improvement.



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Agenda

1. The data science universe
2. The Modelling Analytics and Insights from Data Working Party (MAID)
3. The big questions for the profession
4. Member survey





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The data science universe

26 September 2016

Expertise
Sponsorship
Thought leadership
Progress
Community
Sessional Meetings
Education
Working parties
Volunteering
Research
Shaping the future
Networking
Professional support
Enterprise and risk
Learned society
Opportunity
International profile
Journals
Supporting

The 'data science universe'

- Computer science and Big Data
- Bringing together and manipulation of many data sources in vast quantities
- Initial data analysis - data visualisation & data mining
- Mathematics and in-depth modelling, statistical analyses, predictive analyses
- Decision support, optimisation and Operations Research
- Possible automation and feedback loops – including AI or robotics

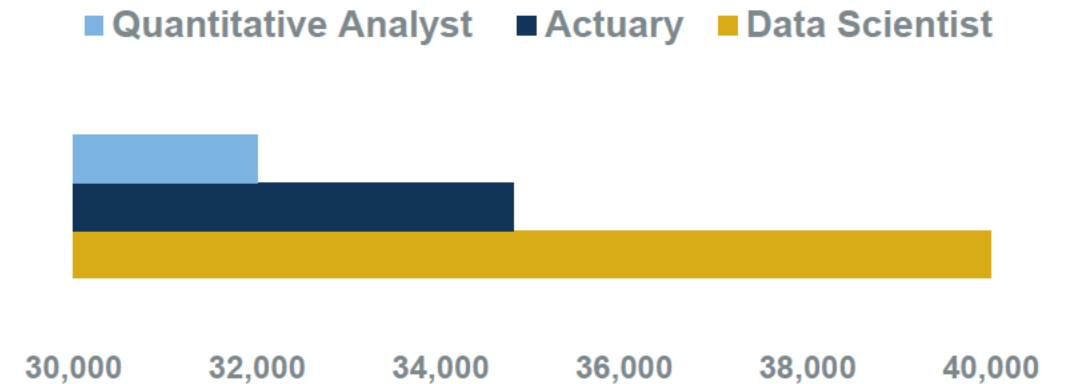


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Harvard Business Review has called Data Scientist the Sexiest Job of the 21st Century.

- New techniques being deployed
- New players in the actuarial space
- Opportunities & threats
- Data scientists – skillsets
- Employers – demand
- Social implications

A search on LinkedIn yielded the following number of job titles:



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The Modelling Analytics and Insights from Data (MAID) Working Party

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MAID is a cross practice working party

- Established in January 2016 with nearly 40 members.
- Aimed at informing the IFoA position and response to new opportunities in data science.
- Steering Committee Members: Michael Tripp (Chair) , Alberto Chierici, Ben Canagaretna, Alicja Nocon, Alexander Hanks, Alex Panlilio, Matthew Wilson
- It has organised itself around 4 work streams:

WS1

- Research

WS2

- New approaches to current actuarial work

WS3

- Possible ideas and solutions in new opportunities from actuarial work

WS4

- Implications for professional affairs



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Workstreams

WS1: Research

- Awareness of data science and 'Big Data' research
- Promote new research.
- Identify current and future key trends in the area
- Conduct literature review of existing resources and platforms
- Review international practices
- Identify relevant conferences and events

WS3: New opportunities for actuarial work

- Opportunities such as Machine-learning, real-time optimisation, customer engagement, data mining, and predictive analytics
- New opportunities within the existing practice areas of Life, General Insurance, Pensions and Investments
- New areas within the digital economy

WS2: New approaches to current actuarial work

- Consider how a variety of data science techniques could be applied in a current actuarial context
- Techniques considered will include (but not limited to) Supervised learning, Unsupervised learning, Reinforcement learning, Decision aid, Bayesian and Deep learning

WS4: Implications for professional affairs

- Exams, CPD, conference agenda
- Public Interest issues, and wider regulatory considerations
- Policy implications and Standards
- Interaction with members on a truly cross practice basis and feedback on IFoA direction
- Possible partnerships, collaboration, and lobbying



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Progress to date

January	MAID launched with nearly 40 volunteers		
February	Steering committee organised across four workstreams		
March			
April	'Data Science Universe' event held at Staple Inn		
May	Literature review gets underway	Investigations of new techniques and areas of opportunity	Opinion based essays produced on implications for the profession
June			
July			
Aug	Common themes paper produced for IFoA management board		Opinion based essays produced on implications for the profession
2016+	Member survey goes live	Next steps..	





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The big questions for the profession

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How quickly will things happen and what are the threats and opportunities?

- How should the IFoA respond?
 1. Do nothing with whatever consequences that might then ensue
 2. Take appropriate action to try to preserve the status and standing of actuaries in their current industries
 3. Go for a growth strategy



Implications for the profession

- **Role of actuary**

- “What is an actuary?”, “what is an actuary famous for?” and “how should actuaries position themselves?”

- **Education**

- What changes will be needed to exams and CPD as data science becomes a core skill for financial and risk management?

- **Regulation**

- Increased competition from non-regulated “professionals” into all areas apart from reserved roles?

- **Cooperation**

- Greater cooperation needed with other bodies / professions / academics / data scientists / practice areas?

- **PR**

- What is an appropriate PR plan given the dangers to professional reputation of exaggeration, over-promising and under-deliverability?



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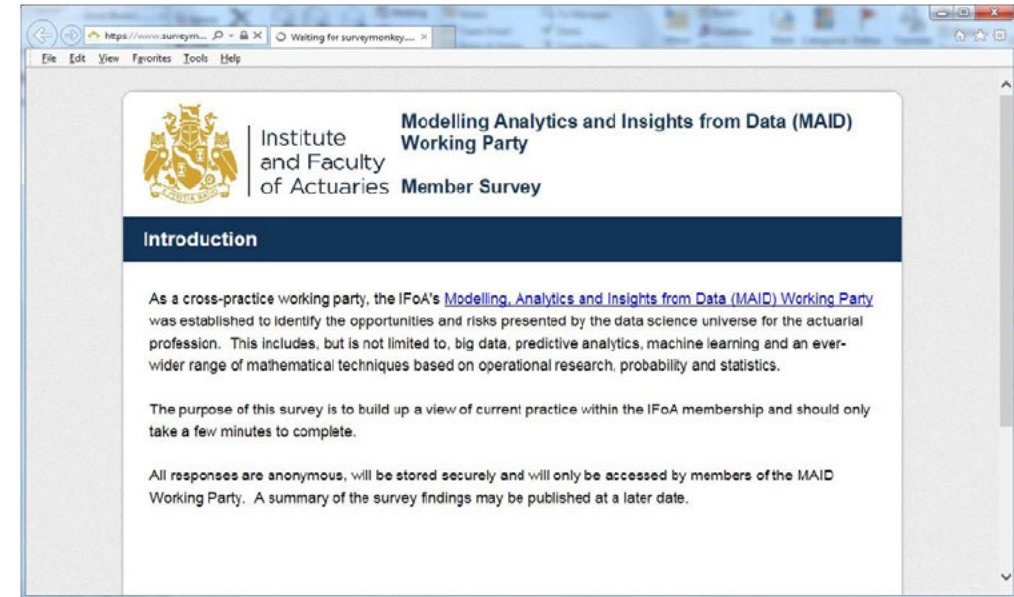
Member survey

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Please take part in the members survey..

- Visit: [bitly.com/maid2016](https://www.surveymonkey.com/s/maid2016)
- Only 5 minutes of your time
- Help to inform future work at the IFoA
- Survey open until 14 October 2016



Questions

Comments

Expressions of individual views by members of the Institute and Faculty of Actuaries and its staff are encouraged.

The views expressed in this presentation are those of the presenter.



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