Rotary club of Farnham

Newssheet February 2024

Events through February

Rotary National Youth Speaks 2024 Competition
On Wednesday 21st February, the Intermediate and Senior team winners of Farnham Rotary Youth Speaks joined other winners of first round events in the District semi-final at Tormead School in Guildford. The Intermediate team from Eggars School in Alton and the Senior Team from Ash Manor School both did well in this qualifying round and can be proud of their achievement. The general standard was very high and the ability of these young people to speak in front of an audience was impressive. Awards were also given to individual Chairpersons, Proposers and Opposers of the teams participating and the Chairperson of Eggars School (aged 11 and competing against 13 year olds) was awarded the prize for the Best Intermediate Chairperson.
Judith Stephens

Ash Manor School team


Eggars Chairperson

Talks Through February

Thursday 1st February
How is AI going to impact on our lives - talk by Mark Whitfield, guest of Paul Whitlock

Mark currently works for a company that partners with Amazon who are looking at AI as an opportunity for growing their business. Amazon is a big player in the IT market and generative AI is another path that is coming up for them.

It is a very broad area - so what is it? Essentially it is a term that refers to machines or software that behaves as if it was intelligent ie with an ability to perform more or less cognitively complex tasks such as problem solving, learning and decision-making. It uses information to decide on responses to questions/needs.

AI has been around for a while. One might conclude there were versions around of it in ancient Greece, but today we started with Alan Turing in 1950's. He developed a test which essentially entailed putting something or someone behind a screen which when questioned would have to demonstrate a human-like response. But it wasn't until 1956 the term AI was used – introduced by John McCarthy - with the first chatbot appearing in 1964. Mark suggested that some of us might have heard of Deep Blue – IBMs chess-playing computer that played Garry Kasparov in 1996 and some of us might remember the launch of first robot pet dog Sparko.

The development commercial products has taken some time, with the first robotic vacuum cleaner Roomba appearing in 2002.

Another milestone was the development of the first virtual smart phone from apple in 2011 with Siri and another similar product from IBM – Watson – which was able to play and win at Jeopardy. Then Amazon introduced Alexa – a virtual assistant – in 2014 and in 2020 ChatGPT was launched, a deep learning machine allowing you to do a variety of things including conversation. ChatGPT is available to the public and so is where generative AI becomes mainstream. This is what we are really focussed on in relation to the creation of new websites, music, video, images. It is a very powerful tool which is developing in a variety of ways. This year we have ChatGPT 4 and looking at ChatGPT 5 – so a key question 'what will come next?'.

Taking 'Go' – a Chinese strategy game 2-3,000 years old, we have a game deep on strategy, but with easy rules and easy to learn. However, it is really complicated with numerous possible combinations of moves. After three moves, there are more possible options for combinations to play than there are atoms in the universe. So an immensely complicated game. The first programme to play it was written in 1968. In 1973 two computers played against each other and in the

1980's we had the first human vs computer tournaments. In 1997, it was predicted it would not be until 2100 that a computer would beat a human at Go. However, in 2015 the first computer beat one – a Korean - and the following year he retired as the computer was so good. THEN the computer was given the rules of the game but no experience. It played itself and was good enough to beat all previous situations in Go. A milestone for AI because by giving it rules – nothing else – played itself, got better and became a masterclass player.

So what is it capable of? Potentially to become a major player in the stock market, business, medicine – all aspects of life – making a major contribution in a positive way. It can offer facial recognition, game playing, speech recognition, automation of vehicles, natural language processing with translation of languages in real time), robots, drones for all sorts of purposes, cognitive computing and more.

So what are the key things/functions of AI – machine learning so that they can perform tasks. Data is used rather than programming, so a marked change from what we have had in the past – it is machine learning capable of making predictions. Deep learning is a step beyond this and a bit more complicated. It is machine-learning using large datasets and neural networks, providing the ability to analyse more complex patterns. Generative AI is about creating new content and ideas based on data that it has 'consumed', with different models eg multi-modal which will generate a picture. Ultimately it does all of this without human supervision, identifying patterns, leading on to generative AI eg fake news, images, conversations. It uses very large sets of data - 45 terabytes of data for ChatGPT. A terabyte is about 50 million pages of a document – a HUGE amount. The important thing here is that we don't really understand the parameters and processing that creates the parameters we see, which does means that it will sometimes throw up anomalies in responses.

Mark provided some examples of what it can do –one was a picture of a unicorn against the sea. A huge number of images are available – a number through subscription. He asked ChatGPT whether we can solve the question of rotary membership, with an answer provided in a very short space of time.

Today AI lacks self-awareness, consciousness and cognitive ability – we talk about the singularity where computers become more advanced than humans. This is where AI can be considered truly advanced and learn by itself, be creative. Might happen by 2030-35. This is what really worries people – to have AI that is truly conscious – as very soon afterwards we will have an artificial superintelligence, essentially simulating human reasoning and developing reasoning etc.

Some have the optimism of Fei-Fei Lie an American Computer Scientist:
'imagine a world in which AI is going to make us work more productively, live longer, and have cleaner energy.'

Rotary Talk
Thursday 22nd February
Gravity and its consequences –
talk by Rotary member Roger Jude

It was Isaac Newton (above) in the 17th Century who surmised that there was an attractive force between objects and the ground. Whilst seeing an apple fall from a tree in his Cambridge garden, he asked himself why does it not go up? His answer - there was an attractive force at work. As a result, he came up with a formula - F=GMm/r2 - where F is the attractive force, G is the gravitational constant, M and m mass and r distance apart. He predicted this equation would apply to the gravitational forces between all the bodies in our solar system. This has been shown to be essentially correct. That it is so, ensures stable orbits around the sun and earth and it enables us to calculate accurately these orbits.

it also enables us to put satellites into orbit and escape the earth's gravitational field. In order for this to happen they have to travel at or faster than 11.2km/sec, irrespective of the mass of the rocket, in order to escape.

So other questions follow - how was the universe and stars formed - with the answer 'from dust and mostly hydrogen' under gravitational forces over millions of years. These forces cause contraction forming proto-stars which continue to heat up to a few millions of degrees. The hydrogen ions then fuse together to form a helium ion with the release of enormous amounts of energy. When a balance is created of outward energy and inward gravitational forces, stability is reached, as in our sun.

Our sun is in the middle of its life at 5 billion years or so. Eventually there will be no more hydrogen ions left – just helium. The core will continue to contract and the outer shell gases will cool and expand. This contraction through gravity eventually enables helium in the core to fuse to form carbon and other elements, and this, along with the continuing expansion, will form a Giant Red Star. At this point our sun will engulf the earth. Contraction will continue under gravitational forces until it cannot contract further. At this point the core is a dense hot solid – a White Dwarf Star, which will cool down and fade away.

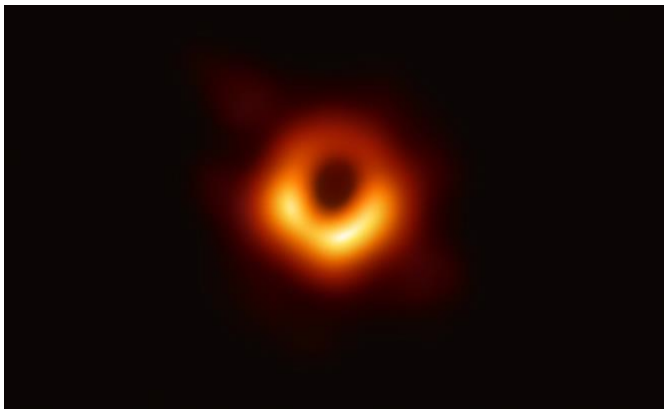
La Place (above) – a French mathematician - 'discovered' black holes, from which no light can escape. So whilst we cannot see them or anything falling into them, La Place mathematically proved they exist. The boundary between what we can and cannot see is known as an Event Horizon – and measured from afar time will apparently come to a stop at this boundary.

At the beginning of the 20th century Einstein – at first working as a patent clerk at the Swiss Federal Office for Intellectual Property in Bern - began to think about gravity and the absurdities of black holes. He concluded that nothing can move faster than the speed of light. He did a thought experiment – try it - imagine yourself being in a trolley moving away from a clock which is at 11.00 am and asking yourself the question 'what if I'm travelling at the speed of light what would the time be say in an hour's time?' The answer is it would be the same time – 11.00 am – but others not moving would see it differently. So we can say that when moving at the speed of light, time stops.

An atomic clock is accurate to within 1/15,000,000,000 of a second per year. but put it in say an aircraft and it will run slower than the clock on the ground. This is called time dilation.

Einstein also explored relativity. His theory of General Relativity showed that Gravity is a force caused by the distortion of space time and he predicted that a beam of light will bend when near an object. This has been shown to be correct. He knew there were black holes but because of the absurdities he spent time trying to prove they didn't exist.

Oppenhiemer (above) proved they did. In 1939 he proved that when a star has used up all its energy a sufficiently large sun (about three times the mass of our sun) will collapse and form a black hole. So by the 1970's all believed they do exist though none had been observed. Now we have **shown** they do and there is one in the centre of our solar system. Below is a picture of the energy being emitted as matter falls into it.



black hole with energy seen being emitted from it

STOP PRESS NASA the day before this talk reported the discovery of a Quasar (in Sagittarius) with a supermassive Black Hole at its heart which is the brightest object in the Universe, shining 500 Trillion times brighter than the Sun!

Rotary Talk – Brian Thomas – Myths & Fake History

Looking at famous characters and their reputations enhanced by stories – are the images portrayed of them fake?

Genghis Khan. Propaganda that he was brutal. He had formed a very large empire by the age of 44 years – encompassed most of Russia, all of China and through to Austria – at gates of Vienna at one stage. Why was he so successful? Some of it down to use of light cavalry which ran rings around the heavily armoured heavy horses of the enemy and some novelty new stuff called gunpowder. But above all his most powerful weapon was his terrifying reputation. His reputation was that if you didn't surrender you were slaughtered. At the siege of Nishapur in Persia it was reputed there were 1million and 740 beheadings in an hour. So the city surrendered en masse. Also the story of the population depletion - was said to have happened in China with 40 million killed – 10% of the population at the time.

So was he really such a pitiless barbarian? Cities that actually paid were left alone. Could the huge empire he had formed survive with such slaughter and uproar? People were actually left in peace most of the time. The beheadings were just out of all proportion to reality. There was something called Pax Mongolica in the 13th & 14th centuries, which embraced the Silk Road – it was left in peace. In addition, he introduced paper money, decimal weights, religious freedom, a postal service by pony – and, there was meritocracy.

Re the reduction in population the period was a precursor to a mini ice-age during which time there was plague, low crop yields and mass migration. Alongside this not surprisingly census taking was erratic and so shouldn't be relied upon.

Aztecs – The headline here is that the Aztecs were massacred by the sword and the cross by the Spanish with small pox decimating the population. And alongside this we have a picture of them living idyllic lives in the jungle before the European invasion. Apology came from John Paul II for the slavery that followed in 1895. More recent apologies have been sought by current President of Mexico from the Spanish and Pope suggesting they should seek forgiveness for an event that occurred 500 years ago. So what was the reality at the time of the invasion? The Spanish invader – Cortes – had 500 men and found allies within the Aztecs as they were hated. The people were poor, were exploited, were slaves and had short brutal lives. The empire was ruthless – a killing empire with lots of people regularly slaughtered. It was dominated by a death cult with much killing and ritual slaughter to appease the Sun, which they believed was getting weak and needed blood. Daily killings came to a peak at Festival of Toxcatl (equivalent to Xmas) – a young man in all his finery marched up to the top of steps after which his heart was ripped out, his head cut off body rolled down the steps and his flesh flayed from his body and eaten.

Napoleon – the embodiment of the French enlightenment – a period in France when freedoms were set – people were given equality and there was religious freedom –

could happily be a protestant or a catholic. He defined the ideals of his age, but he did that by continuous self-promotion. Put together Napoleonic code, which embodied personal and religious freedoms. He started educational reforms with primary and secondary education – established colleges and the first University of France. He was a military genius but self-promotion helped him with eg medallions made with this image on them, music written in his name.

Some saw him as a brigand - he tried to re-impose slavery in the Caribbean causing riots. He talked of treating people fairly, but at the same time was killing significant number – up to 3-6m cross Europe - 1.8m died in Russia alone.

He was a hypocrite eg talked of democracy but actually was a dictator. Britain tried to counter this with their own fake news – a French language newspaper started in England with fake news about him, which he then had to counter!

Churchill - a 20th Century icon - we have an image of a man with a hat and cigar. He was voted the most important Britain of all time in a BBC poll in about 2002. He was famous for a number of anecdotes and quips, but he was actually a very serious man – his 6-volume history of the 2nd WW ensures he stars in it helping the legend to become fact.

The story of top secret papers – a Whitehall cleaning lady comes out of work – it is a black out but in walking along the pavement she finds a folder with some papers on the floor. She picks them up and takes them home. When son comes home from work he decides they should be returned. So he takes them back to the Admiralty and insists he sees the Admiral. It turns out the papers showed details of the Italian campaign. Churchill goes apoplectic – 'how could it happen?'. Then concludes an award should be given to this woman as it is a really important thing that she has done – she should become a Dame of the British Empire. So a reputation of supporting the common man. But the whole story is totally untrue – written by Boris Johnson.

Are a number of anecdotes/myths. One of Churchill on walking down a corridor when he is challenged Betty Braddock – 'sir I believe you are drunk'. His response is 'Madam and you are ugly'. Didn't happen to Churchill – was recorded in 1882 a meeting between 2 Members of Parliament. Another when Nancy Astor was reputed to say 'if I was your wife I'd poison your coffee' with the response 'if I was married to you I'd drink it!' And old Victoria joke in a film in 1935. A socialist MP with Churchill standing in urinals in Houses of Parliament. He decided to leave quickly as didn't want his member nationalised. The Atlee assassinations – an empty car pulls up to Downing Street and out comes Clement Atlee

He took control of the narrative through books and by featuring himself as a hero.

Hitler. In 1943 CIA did a psychological profile or him – asking what was driving him – major motivations. Outcome was that he acted under 'divine protection'. In the 1938 interview with the Daily Mail told the story of when in the 1st WW he was in the trenches with a tin can and because he was uncomfortable where he was he walked a few yards up the trenches. A few second later a shell kills all those where he had been standing. When he was recovering from a gas attack in the 1st WE he had a vision that he was going to lead Germany to glory – he was going to make Germany successful – we will make Germany glorious. Chamberlain in 1938 visited the Birghof meeting Hitler to talk peace. Hitler him a picture with a soldier in the 1st WW. Says that that the man almost kills him – but Hitler is saved. Henry Tandy was that soldier – a well decorated soldier in the British army. The story told is one of an attack in the 1st WW. Tandy, who was a very famous soldier, was there and when the smoke cleared he saw a German soldier standing there. When he

looked at the man he saw he was unarmed so he put his gun down – that man was Hitler. The picture was genuine. Why did Hitler pick Tandy – because he was the most decorated ordinary soldier in the British army – therefore the hand of god. The story is on history channel documentary and is in a Morpurgo story. But could not have happened for Hitler was actually on leave.

Conclusion

Via social media we have an increasing amount of untruths/myths, left to the news Channels to verify. And with AI there will be even more challenges eg can't watermark several reasons, but above all at the time original photos therefore what is real/unreal.

Lunchtime Talks in March

Thursday 7th March Business Meeting

Thursday 14th March Colin Simmons RC of Godalming Woolsack re Royal Surrey Cancer Charity.

Thursday 21st March Michael Conoley, WBC Planning

Thursday 28th March Peter Duffy "The 14th century Renaissance" What was it and why was it given that name?

If, as a Friend, you are interested in coming along to any of the talks and for lunch (£22) please email lunches@rotaryfarnham.co.uk on the Monday before, saying whether you'd like, fish, meat or vegetarian, pudding or fresh fruit. We start gathering at The Bush, Farnham from 12.30 for lunch at 1.00 and the talk at 2.00, finishing at 2.30 pm.