

# AI and You

Transcript

Guest: Kristóf Kovács

Episode 11

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Hi! In this episode, we'll conclude our two-part interview with Kristóf Kovács, the international supervisory psychologist of Mensa. Mensa is a worldwide society whose membership requires a score in the upper two percent of the population on an IQ test, and Kristóf speaks for Mensa on the definition of intelligence. His job is to ensure that they're measuring the right thing in the right way. Kristof obtained an MA from the University of Szeged, and a PhD from the University of Cambridge. Subsequently, he worked as a postdoctoral fellow at the Budapest University of Technology and Economics and the University of Amsterdam. His main interest is individual differences in cognitive abilities, bridging cognitive psychology, and psychometrics. Currently, he is senior research fellow at Eötvös Loránd University in Budapest.

In this interview you'll hear him mention something called the g-factor, which is a measure of general intelligence. Roughly speaking, it's what you get when you consider someone's various measurements of specific intelligence over as broad a range of domains, or types of intelligence, as possible. People who design IQ tests have sophisticated ways of putting those figures together.

So why do we want to know about human intelligence? Well, we've spent all this time talking about artificial intelligence and we know what 'artificial' means, but what is 'intelligence'? And it's very hard to know. Even in Kristóf's field there is no consensus definition of intelligence, and that's after a lot of very, er, intelligent people have studied and thought about that question. There's no question that IQ tests are measuring something, and for general aptitude tests or deciding whether you get into Mensa they might be good enough, but when we're trying to make a computer intelligent we have to get very, very specific about what we mean when we say that. In the first half of this interview we talked about different models of intelligence, from Gardner's eight intelligences, which include, for instance, musical intelligence and intrapersonal intelligence, to the CHC model Kristóf described. That says there's crystallized intelligence, and fluid intelligence, which are subdivisions of the g-factor I just mentioned, and the crystallized intelligence is the application of rules whereas fluid intelligence is generalizing from other knowledge. Computers are very good at the crystallized kind of intelligence but not at the fluid kind. And then there are several other cross-cutting categories in the CHC model, like visual processing and long-term storage and retrieval. Do a search for CHC intelligence and you can find more to read up on.

Now, those may be useful definitions for breaking down human intelligence but do they work for analyzing machine intelligence? I'm pretty simple-minded on these things, so the definition of artificial intelligence I've been using in my classes and talks is that it's a computer doing something which a person could do, but which they could not practically write down the steps for. Now, of course a lot of what's called AI at the moment doesn't fit that definition – because a person could write down the steps for what's being done – but the reason I use that definition is that I want a clear distinction between AI and what computers have been doing for decades in applied statistics, business analytics, and predicate logic – what's sometimes called Good Old Fashioned AI, or GOF AI. Because the line between that and a calculator on steroids is too blurry. So an example of what does fit that definition of AI is facial recognition. You can't write down the steps to describe how you recognize faces. No one can. You might think you can: maybe

you start out with some sort of decision tree like “Female with jowls and crown equals Queen Victoria; Crooked teeth plus wart on nose equals Witch from Snow White; Orange face plus comb-over equals Donald Trump.” But that’s just not going to get you further than a handful of extreme cases. Pretty soon you’re going to realize that you can’t write down the steps for recognizing faces; you just do it. But if the saying that “A computer can only do what it’s programmed to do” were true, then we wouldn’t be able to get a computer to recognize faces. And yet we have. We trained neural nets to do that, and they learned. We don’t know how they do it, either, but they work anyway. So that’s my definition of artificial intelligence: when a computer does something that a person could do – given enough time – but cannot reasonably write down the steps for doing it.

And I have a definition of intelligence too, at least until I find something I like better. That is that it’s the rate at which new knowledge is created. In the words of Lex Luthor, some people can read the ingredients on a chewing gum wrapper and unlock the secrets of the universe. Obviously thinking of himself there. Think of someone smart, like Sherlock Holmes, or my favorite TV detective, Adrian Monk. Someone comes in to see him and the observable data about the visitor is the same as what you and I can see, but he puts these pieces together and deduces that the visitor is a Freemason who has done a lot of manual labor, visited China, and written a lot lately. And that’s all useful knowledge that didn’t exist before, and Holmes – or Monk – created it. So my working idea of intelligence is that it’s the rate at which something does that. What do you think?

Anyway, back to part 2 of the interview with Kristóf Kovács.

There was something last year called the AI Animal Olympics where people entered different AIs and they were graded according to what animal's level of intelligence they seemed to approximate, which got a lot of interesting attention. To see whether someone's AI was the equivalent of a rat or a mole or something was quite an interesting exercise in that respect. You mentioned the Turing test. Just for anyone that's not familiar with that, that was proposed by Alan Turing back after the Second World War, sometime around the early 1950s as a way of “How should we determine whether a computer is thinking like a human?” He was using the word “thinking”, which is maybe halfway between intelligence and consciousness, and he proposed this empirical definition that we should have a test where you get to talk to a computer that, on the other side of the communication link is either an AI or a human. And in a number of tests, if you can't tell that the AI isn't the human, then we should say that it's thinking like one. It's actually, I think, problematic in that it is only telling you whether the AI is pretending to think like a human because if it were conscious in the sense that we would want anyone that we were talking with to be, then it would know that it wasn't. Therefore, it would be lying in pretending to have that shared background with us but that's a topic for another discussion. Let's ask a completely different question for a moment. We think of intelligence as being something innate. Like you can learn facts. You can build up your muscles, but we tend to think of intelligence as being a fixed factor like, “This is how tall you are. This is your eye color.” Is that true? Can we change it? Notwithstanding drugs that can temporarily change it like nōotropics, narcotics. If someone said, “Kristof, I want to score 10 points higher this time next year, what do I do?”

Wow, okay. Whether intelligence is innate is again, one of the most heated controversies in the field. I wouldn't say that it is the general agreement that it is innate. There is general agreement that it is to a large part heritable and this is a complex thing. They are not the same and I will get to that just in a second. But first, what you have to realize is that IQ is a relative score. Originally,

IQ testing used the concept of mental age. So the guy who invented the IQ test score, it is a French guy called Alfred Binet, a French psychologist, capitalized on the finding that children, by and large, become more intelligent as they go up. So older children are more intelligent than the younger children and so he categorized and created a lot of problems to solve and categorized them according to the age at which half of the children could solve them, which means pretty much the average children of the given age. So an item that can on average be solved by nine-year-olds, was ordered as an item that requires a nine-year old's mental age to solve, a six-year-old and so on. And this is what the test was built on. That already is a relativistic score because it depends very strongly on a norm population on which the item is normed so then when it's categorized that it's typically eight-year-olds that solve this item. But this only works for children. As soon as this law is not true anymore, that as our chronological age increases so does our mental capabilities, which is true at 10 and not necessarily true at 85, not even, sadly enough at 40, it means that it doesn't work anymore. So the concept of what's called deviation IQ was born and that's what we use for IQ measurement, even for children now. That there is a trick because IQ stands for intelligence quotient and you get a quotient when you divide something with something. Originally, it stood for mental age as calculated as I said, it's the age at which the child performs, divided by the child's chronological age. So, a six-year-old who performs at the level of an average seven-year-old is ahead, and the same six-year-old who performs at the level of a five-year-old is behind. That can be expressed in this ratio of mental age and chronological age called the IQ. The concept of IQ became very popular when they realized it doesn't work and if you want to test for adults, you have to come up with a new method, because mental age doesn't improve anymore with chronological age. So, a researcher called Wechsler, also the father of the Wechsler test, created this concept of deviation IQ, which all it does is it compares one to one's peer age group. So they administer items to a large number of people which is called the norming population, and then your score on the test called your raw score is compared to the raw score distribution of this norming population. If let's say you perform exactly as the average of your age group, your IQ will be 100. Then this deviation IQ follows the particularities of what's called the normal or Gaussian distribution. So, if you outperform, let's say 84% of your age group, you will have an IQ of 115. If you outperformed 98%, you will have an IQ above 130, and so on. But this is a trick because it's not a quotient anymore. The name IQ was kept because by then it became well-known and popular, but in fact, it's not a quotient, it's just a comparison to a norm group. And since the normal distribution has very nice mathematical properties, the statistics, the percentage of people you outperform called the percentile is always convertible. Now, again, I'm not trying to avoid the question but what I'm trying to say is, it's not like body height in this matter because body height is an absolute score. If you want to go into details of the maths, the difference is whether you have an absolute zero or not. There's an absolute zero for the centimeter scale. There's no absolute zero for the IQ scale because it simply compares to a norm population mean. So it's very, very different to say "I want to grow 10 centimeters" than "I want to grow 10 IQ points." A nice analogy to express this is, because you brought up height, is- I don't know if you have it in Canada - in Hungary, we used to have it when it's physical education class or whatever it's called in schools, you know, the physical education. Is this the right word? I'm not a native speaker. Physical education, okay. So what teachers often do, or at least did a few decades ago is they line up all the kids in terms of the order of height. Exactly now that's it. Now in that respect, if you think about that, if you think about such a line as - in Hungary, there's a very nice expression, which unfortunately I'm not going to learn in English. So this line with physical education class, height is the equivalent of one's cognitive abilities - how well one performs on their own, and that can be compared to one's previous

performance. But IQ is not like that, IQ is like the line. So basically, going up 10 IQ points means that instead of being better than let's say, 55% of people, you're now better than 70% of people, and then it's a relativistic thing. So there's a finding called the Flynn effect that IQ scores have been rising since almost the birth of IQ testing and the tests are often re-standardized, meaning that they are given to new normed populations every now and then, and the means get higher and higher, which means that if you get a raw score that translates to 100 IQ, your score on a test norm that was obtained 30 years ago would be, let's say 115. In which case you say that in 30 years, the IQ increase of the population was 15 points. Or the other way around, somebody who scored 30 years ago would score on today's norm, then if there's a 15 IQ points Flynn effect, then they would score 85 - the average person, so it was the average person 30 years ago. So you have to keep in mind this is a relativistic thing and when it's renormed, we always get the mean to 100, but the entire scale to which we compare can move right up to now.

Right.

And I admit, at this point, I'm trying to some extent avoid the question because I can't give you a recipe on how to increase your IQ by 10 points. There's a very recent meta-analysis actually, that found that every extra year of schooling matters one to four IQ points depending on the schooling and the ability but then again, it depends on the population. If like - it's a silly idea but if everybody else had to stop education, and you're the only one still in class, then your IQ will skyrocket because it's a relative score. But it's not necessarily different from the one you would achieve normally if all the other kids attended school as well, but since it's a comparative score, you will just leave them behind. And sorry, it was two questions. So the innate thing, it's also important. It's the same exact logic. When we're talking about heritability, we're talking about individual differences. Again, all individual differences. Just like IQ is a lot of things, so is this.

Right.

Sorry, just one more sentence. Heritability actually gives you the ratio of the total variants that can be attributed to genetic differences, and that's like 50%, so half of the variance is genetic. It doesn't mean that any single person's IQ score is 50% a result of one's genes because you wouldn't - again to this height analogy and then I stop here. You wouldn't say that if someone is six feet tall and height is five, six percent heritable, then the person owes five feet to their genes and one foot to the environment because that would be silly. What it means is that in a population, the differences of height to a large extent it has to be due to genetic differences and that is the same with IQ.

Right. So you're talking about the way in which we measure IQ is that the number is a measure of your intelligence relative to the rest of the population and if that shifts, then so will the basis for the number. One thing I want to make sure that people listening to this understand is that there are actually different scales of IQ and they're all based on a normal curve, but on one of them, that one standard deviation from the mean might be 15 points on another, it might be 24. So when someone tells you what their IQ is, which in Mensa is a no, no, but if someone tells you their IQ or you learn the IQ of someone, it's meaningless unless you know which scale it's measured on, correct?

Yes, I couldn't agree more. That's why I always prefer percentiles because that's the way to convert. Both scales, the 24 scale, and the 15 scale, they are both based on the normal distribution and the same method, the qualities of the normal distribution. So in one case, as you said, the standard

deviation is translated to 15 IQ points, in the other case to 24, but it's always one standard deviation and as it happens, you can always calculate the percentage of people you outperform on a given standard deviation. So if you are one standard deviation above the mean, you outperform 84% of people, regardless of whether you use a scale that's 15, and your IQ will be 115 or use a scale that's 24 and it's 124. Still, in both instances, the fact of the matter is that you outperform 84% of people.

Right.

And the same with two deviations, which is, of course, 130 and 148, which is a large difference, but both are at the 98<sup>th</sup> percentile. I also have to say I think percentile is always more informative. And there's just so much hype about IQ but exactly because of these things, and people are not usually aware of what you just said, that there are different scales and so on. There are, at times, silly comparisons and I always encourage people to use the percentile because that's the way of conversion. I also have to add that that the 15-point scale is almost exclusively accepted these days. So the 24 point scale was used for a while and it was created by someone called Cattall that I already mentioned, he is one of the Cs in CHC, but today, almost exclusively, the 15 IQ point scale is accepted, but you can bump into people who have IQ scores on the 24% scale and their IQs sound a whole lot better but in fact, it's the same percentile.

So if we restrict the domain of this comparison to one individual at a time, and think of that as being analogous to someone takes the bar exam or a driving test and they fail, and they want to pass the next time so they have a good idea of how to do that - training, more book reading. So in the position of someone who wants to improve their score on an intelligence test, relative to what it was last time - get more answers right - I think the general population has the sense that this is futile, but now that we're starting to understand about neuroplasticity in particular, and that the brain is a lot more pliable than we had assumed, that there are ideas that that's not so futile. Do you have any thoughts about that?

Well, there is no 100% money-back guarantee kind of method for sure. Again, we know a few things that are good for IQ, or to be more precise, we know a few things that are very bad if you don't have them. So in many instances, there are these kinds of asymptotes or thresholds in terms of the environment. So people often claim high heritability, meaning that the environment doesn't matter very much in terms of nature determining individual differences but it's only true so far as the environment is not awfully bad. So like schools, there's a lot of data that school quality doesn't matter as much as people usually presume. But of course, you try to put your children in good schools, not just because of their cognitive abilities, so ultimately there are other reasons, but in terms of cognitive ability, what the data shows is that school quality doesn't matter as much as people presume in terms of improving cognitive ability but schooling itself does matter, of course, so if your child doesn't attend school, then that's very detrimental. Same with nutrition, which is a more obvious example. I mean, taking in 5,000 calories a day, won't improve your IQ for sure, but taking in 500 every day as you grow up instead of like 2,000 would be very bad for your IQ and for your brain development, and so on. So very often there are these thresholds or asymptotes where the environment matters if it's bad, but if it's good enough, then it will not influence individual differences anymore. And I again have to emphasize we're talking about individual differences. It doesn't mean that it's not good for your skills. It means that since everybody else gets the same treatment, you will not get a relative advantage, which is all IQ is about. But it doesn't mean it's not important for the development of your own cognitive skills compared to just yourself and how you were 10 years ago.

Exactly. And there's a popular idea that's been going around for a while that says that everyone is, in some unspecified ways, the average of the five people they are closest to, so maybe we can get smarter by hanging around smarter people. I know that begs all kinds of mathematical questions from your point of view, but from an individual self-improvement point of view, maybe it's an idea. Certainly, that was the point of Mensa, right, for smart people to be able to hang around other smart people? Can you tell us what your role as Supervisory Psychologist of Mensa entails?

Yes. Originally, the purpose of Mensa was not just for smart people to hang around. The founders of Mensa, after the Second World War, had very, very ambitious goals. They hoped to create an organization that collects the smartest people in the world and so governments from then on, will rely on their advice and will consult with them and that will lead to world peace because, of course, if governments had consulted with smart people all the way, they would have avoided all those stupid mistakes that went to these catastrophic events.

As well that points out one of the ways in which very smart people can also be rather ignorant of certain things about people, but anyway, keep going.

Yes, yes, yes. So Mensa now, of course, doesn't contact governments to give unsolicited advice, so the main purpose indeed is to provide what's in the Mensa constitution - an intellectually stimulating environment for the members. But Mensa also has, besides this sort of social goal, it also has two other stated goals. One is to support intelligence research, and another is to foster human intelligence and so there is a Mensa Foundation, for instance, that gives grants for both researchers and students and so on. Yeah, so that's for that. As for Supervisory Psychologists now Mensa does IQ testing of course for admission and that requires psychologists. IQ testing is psychological testing and for legal reasons, it's very strongly regulated in most countries. So Mensa as an organization, cannot in most countries, just go around and give IQ tests to people, they need a psychologist to do that and the psychologist pretty much supervises this testing and takes professional responsibilities. So that's the role of the Supervisory Psychologist. There's a Supervisory Psychologist for every Mensa chapter and there's an International Supervisory Psychologist that sort of supervises the entire thing, but not directly. It's quite decentralized so Individual Supervisory Psychologists in every nation or every chapter have a lot of rights, a lot of autonomy, to decide on what tests they will use and so on. But if they want to change the test, that has to be approved by the International Supervisory Psychologist, or if let's say, a National Psychologist resigns and the given board appoints a new one, then the ISP, the International Supervisory Psychologist has to approve and so on. So that's the main activity of the supervisory psychologist, to supervise the testing activity.

I see. Do you attend many Mensa events yourself?

Not these days, unfortunately, to be honest, and I have small kids and all that so not very often these days. And of course, during the lockdown, there were no events at all. There are one or two online events, but I do attend some that are great invited talks by people. I think that's what I attend most. Less of the partying kind of events these days.

If someone's listening to this, who would qualify for membership, how should they decide, in your opinion, whether that might be a good thing to try out?

Well, they should look for the national Mensa chapter where they live. If there is a Mensa organization in the country they live and that's like nearly 50 countries now so in most countries there will be either a full Mensa or an emerging Mensa which I won't bore you with, but some kind of Mensa organization that exists and does testing. Then they should just search for that. Just Google Mensa in the local area and see whether there's a Mensa position and if there is, it will organize testing and they can take an admission test. If there is no local, but *only* if there is no local chapter, one can become a direct international member, which is much less fun to be honest because there are no programs or events to attend, you just get a certificate to remember.

But then you can send what's called the prior evidence. So if you happen to have an IQ test result that's obtained with an accepted test, and it's supervised. So it's not one of those unsupervised IQ tests on the internet where you pay \$5 and you get an IQ of 250 or something like that. It's not one of those nonsense tests but a genuine, valid IQ test that was supervised and you get an official result or report of that, you can submit it as prior evidence and become a direct international member, in which case, the prior evidence is evaluated by the International Supervisory Psychologist because there is no national chapter, so it's also one of the things I do.

I see. You mentioned that your children are keeping you busy at the moment. Mine are, at the moment, 10 and six, and watching them grow up has been an exercise in trying to figure out how intelligence develops from observing it happening there and being largely frustrated, and this miracle happens that they're unable to articulate. So I see, for instance, my 10-year-old daughter's progress in chess over the last six months has been staggering, and yet, to her, she's just operating intuitively and I can't find out how she got that much better at it. But now, she's beating me without my having to spot her five pieces anymore and it's remarkable that this process is going on. Have you had experiences like that where you look at your children as a father and see this development of this amazing capability?

Yes, I agree. It's remarkable and it's miraculous. I mean, I cannot watch it obviously as a researcher just a father but it is remarkable. My daughter is also 10. Unfortunately, she doesn't like chess. My son who is seven he loves though and he's just, he's becoming good, only that his attention span is not long enough but yeah, I have a very similar experience. He has developed a lot in the past few months, and very intuitively, almost like a skill instead of explicit knowledge.

This has been great. I don't want to take up any more of your time. We have a limit here, but maybe we could talk some more in the future. Just give me an idea briefly of what you're currently researching or what developments in your field are happening right now that excite you, how this study of intelligences is evolving.

Okay, first of all, I'm involved in many of the debates that I've tried to depict as objectively as I can, but frankly, my own work is on modeling and related to the  $g$ -factor and I'm one of those people who argue that  $g$  is more like a common consequence rather than a common cause and focus should be put on specific abilities. So it's a very useful and handy statistical summary, both  $g$  and IQ but if you want to actually get to know someone's cognitive abilities, then you should focus on their profile of individual strengths and weaknesses because there are people - even in Mensa, actually, interestingly - there are people who have very high verbal and are not necessarily that good in spatial things. Whereas others who are really good at everything spatial like spatial puzzles, but if you offer them a game of scrabbles, they go for the gun. So yeah, there are very specific profiles of strengths and weaknesses. So the debate, it's got us engaged for a century, it

will get us engaged for some more, but there are new results. By the way, I can't answer that very shortly, so I won't go into detail. That's one thing and the other exciting development, for instance, is genome-wide association studies, which is GWAS, as they call it. They scan the entire genome and look for pieces where variation is correlated with variation in the phenotype, in this particular instance, intelligence. And that, of course, is a correlation, so we are a few steps from actually understanding the causal mechanisms, but still, it's really exciting that we can scan the genome and look for places where variation correlates with ability.

And that could open up a whole can of worms about eugenics perhaps?

Yeah, I hope not, because of all the awful things done under eugenics. It doesn't necessarily mean we can influence that. I was talking about actually looking at these correlations. Luckily, it's not something that exists as it existed in the 1920s, but of course, the early history of IQ testing especially in the US actually, is strongly connected to the eugenics, hopefully not anymore.

Yes, unfortunately.

Yes, very unfortunate. But it's very different. I mean, originally Binet created this test as an individual test to provide individualized help to children who struggled at school, and in the US, it got a really different take. So it became an instrument of mass testing, that focused more like on limitations than on- so like, actually trying to validate the limits of one in terms of cognitive ability and then find the right sort of the right path for the person. And then it was very problematic in a large number of ways which I don't want to go into with time but yeah, so hopefully these things are part of the past really. Just one more thing, this is interesting because you just mentioned this. One of these really good genomic studies on intelligence appeared in the journal *Nature* which is, of course, one of the highest prestigious scientific journals. *Science* and *Nature* are the two most highly cited popular [journals] for science and ones that I know are read outside of academia. When this paper was published, the editors of *Nature* felt compelled to put an editorial in there where they argue that yes, somebody hears intelligence plus genomics, it only rings the bell "Oh, isn't this eugenics?" I don't remember the exact title, but it was something like "Intelligence Science Should Not be Held Back by its Past" or something like that. If you look it up, it appeared in *Nature*. So yeah, I agree with that wholeheartedly. I hope that is the case.

But where it's kind of colliding, though with us again today in that people in certain parts of the world undergoing in vitro fertilization have available a technique called PGD, pre-implantation genetic diagnosis, and they can- it's still illegal, I think everywhere to alter the genome in a human fetus but they can select for certain genes. And while I believe that fertility clinics decline to provide genetic information to enable selection based upon intelligence, that's possible.

Since this is illegal, it hasn't been tried. So I would have to see the first success story [before believing that it] results in extremely smart humans.

It is something that could happen.

In theory, yes.

I'm not saying it's a good thing, but it is something that some people want to do and is an issue that probably will not go away anytime soon.

I have to remind you that IQ is a relative score. So you will only get the advantage in terms of IQ not in ability but in IQ if you're the only one using these techniques. If every child undergoes the same genetic selection to boost their cognitive abilities, then the mean level of intelligence will increase for all of humanity. This is a silly thought experiment. But the IQ won't change because then everybody will outperform previous generations but not the norm group.

Exactly. The mathematical consequences are minor, but the moral ones are thorny. Any final thoughts you would like to leave our audience with regarding intelligence or Mensa or your work?

We just briefly tabbed on this quantitative measurement for machines. That's a very exciting field and I expect developments there that are very, very interesting initiatives there. And a number of fascinating books and papers came out that tried to overcome this problem and somehow tried to get something similar to IQ for machines. So I think that's a fascinating area of research.

IQ for machines. That's an immensely interesting, fascinating, provocative concept, and what a great place to leave everyone hanging here at this point and conclude this interview. Thank you very much, Kristof Kovacs. Take care and hopefully, we'll talk again later.

I would love to and thank you again for having me.

That concludes the interview.

I'm going to put in another plug for my upcoming continuing studies course that covers the same theme as this podcast: What is AI, Why will it affect you, and How can you and your business survive and thrive through the AI revolution. And this year, for the first time, that course will be online! For fairly obvious reasons. So I had the time changed to morning in my timezone – Pacific time - so that it runs at a time where everyone from Hawaii to Moscow can participate at a reasonable hour. Sorry, all you folk in India, China, Australia, and Japan. We'll work something out for you next time.

This is 10 *hours* of instruction. It takes place over 5 classes, one per week, starting September 9. There's a registration link in the show notes and the transcript. Or you can go to [continuingstudies.uvic.ca](http://continuingstudies.uvic.ca) and search on artificial intelligence, it's the first hit. You'll know you're in the right place when you see University of Victoria at the top. Since it's online I'm hoping they won't cap the signups at the limit they have on the page. I get paid the same no matter how many people are in the course, the reason I want lots of people there is to get more of my message out there and because the more people the more fun and impactful the classes.

What are we going to talk about? A huge variety of things, from the history of AI, to the present issues, to the speculative future; from the people who are influential in the field to the impact of AI on jobs, media, and society. We'll spend a great deal of time explaining AI at a practical level – that doesn't require computer experience – so you get a good idea of just what it can and cannot do now and in the future.

Obviously that's a really broad syllabus. Just like this podcast. We're not going to teach how to program AI, there's no code or math, it's all about... well, AI and You. *Everything* I'm producing is doing that job: this class, my videos, my TEDx talks, my book, and this podcast. Next up will be the rap album.

My vision – just so you know where I want to take this – is to produce not just a course but an entire department, giving multiple programs of multiple courses, for credit, at undergraduate and graduate levels, and also with high school and corporate training versions. The idea is not world domination – well, not just world domination - but to create part of what we need to help people understand how to deal with, and leverage, disruption.

<https://continuingstudies.uvic.ca/humanities-and-social-sciences/courses/artificial-intelligence-and-you>

As long as we're talking about education, this episode's AI headline is that people have been putting GPT-3 to work writing creative fiction, one of which was composing letters to Indiana Jones denying him tenure at his university. The link is in the show transcript:

<https://www.gwern.net/GPT-3#indiana-jones-tenure-denial>

Here's an excerpt, and I remind you that this is part of a lengthy and quite coherent letter entirely written by GPT-3 in response simply given the following prompt: "Back From Yet Another Globetrotting Adventure, Indiana Jones Checks His Mail And Discovers That His Bid For Tenure Has Been Denied"

Here's part of what it said:

"Your lack of diplomacy, your flagrant disregard for the feelings of others, your consistent need to inject yourself into scenarios which are clearly outside the scope of your scholarly expertise, and, frankly, the fact that you often take the side of the oppressor, leads us to the conclusion that you have used your tenure here to gain a personal advantage and have failed to adhere to the ideals of this institution."

Okay, maybe it's too early to start talking about computers having a sense of humor – and if you thought intelligence was hard to define, wait 'til we try to pin *that* one down – but maybe we should start tracking that.

Next episode's guest will be Paolo Pirjanian. He is the founder of Embodied, Incorporated, which makes robots to assist children who are challenged in some aspect of their social development. You'll be amazed at what it can do. That's in next week's episode of **AI and You**.

Until then, remember: No matter how much computers learn how to do, it's how we come together as *humans* that matters.

<http://aiandyou.net>