Interview With An Axuary

A window announcing an incoming call chimed on Karl-Lin Lee's computer screen. Her hematite necklace flickered in the light; her eyes opened. She checked her make-up in a hand mirror then glanced at the senryu encased in a glass block in front of her keypad:

x plus x

chromosomes

she loves algebra

Karl-Lin took a breath, touched the screen icon and accepted the call. A hologram appeared with the head and shoulders of an attractive African American woman in front of a TV set with CNN logos emblazoned across it. In her mid-thirties, she wore a clingy red dress with a revealing neckline and matching lipstick.

"Hi Karl-Lin, this is Abbie. Are you all set?"

"Yes, thanks." She touched her necklace. "All systems are go."

Abbie flashed her telegenic smile and brilliant white teeth. "You look great. I like how you did your hair; the pink blouse under the dark blue jumper was a good choice. We go live in about five minutes. Any last-minute questions or concerns?"

"No, Abbie, I'm looking forward to the interview."

"Great. I'll introduce you and then we'll start."

Karl-Lin busied herself answering text messages while Abbie talked with her director and camera personnel. Then she heard a voice count down, "Five, four, three, two, one, we're live."

"This is Abbie Filipe with an exclusive CNN interview with Karl-Lin Lee, an actuary and Group Leader for Gallup Axuarial. She was part of the team that developed the new gold

standard for polling national elections. Karl-Lin, how do you account for the staggering success in predicting the results of the hotly contested 2068 presidential race?"

"First, thanks Abbie, for the opportunity to speak with you. Gallup Axuarial or GA as we call it, started building a new type of national database following two successive elections in 2016 and 2020 when it became clear that traditional methods of polling no longer worked."

Abbie interjected, "And what were those?"

"Old school methods that relied on phone interviews and email questionnaires."

"Why were those inadequate?"

"Simply put, people refused to answer phones or email so that the polling did not represent a fair cross-section of America. To further compound the problem there was a statistical anomaly in the data."

Abbie held up a finger. "In layman's terms, Karl-Lin, what does that mean?"

"There had been a growing mistrust of the media fueled by the animosity of partisan politics that skewed the polling sample."

Abbie frowned as if she disapproved. "Let me follow up on that. You mean like deliberately lying so one party might have a false sense of security about their chances?"

"There was some of that but not enough to move the dial. The major cause was under-reporting particularly from rural populations. They did not respond to traditional polling methods."

"That's interesting." Abbie shrugged and said, "I wouldn't think those areas would be a significant part of the total electorate."

"Right, it's not as significant in 2068, but in 2020 the percentage of the population categorized as rural was a lot higher."

"Can you give me an example?"

"Sure, in 2020, the rural population of Pennsylvania, a key state in that election, was 27%."

"So, about a third of the state."

Karl-Lin blinked a few times before responding. "Close enough. In comparison, only 12% of Pennsylvania now is considered rural."

Abbie put a finger on her earbud. "Let's move on to the tool that GA developed. What makes it so special?"

"Unlike prior methods, our actuaries and data scientists created a model population of actual voters that is more inclusive than previous polls, has a much higher degree of reliability, and is updated continuously."

Abbie shook her head. "There's a lot to unpack there for our viewers. Let's try and break that down. Tell me about the model."

"We maintain a database of real people selected from representative voting districts that is continuously updated on a daily basis."

Abbie looked doubtful. "That must be very difficult to one, gather, and two, maintain."

"It wouldn't have been possible without the ubiquity of the internet and a new generation of supercomputers. Over 99% of registered voters have smart phones, laptops, tablets, or other devices they use for shopping on sites like Amazon, for social networking like on Facebook and LinkedIn. Then there's microblogging on Twitter, photo sharing on Instagram, Snapchat, Pinterest. The list goes on—video sharing on YouTube and other platforms, and home entertainment like Netflix and Hulu."

Abbie held up a hand. “Wow, guilty as charged. I use many of those myself. Are you telling me that GA captures my information in its database? What about confidentiality?”

“The issue of data confidentiality has been an ongoing subject for decades. Most people sign away their rights by clicking on the I agree button without reading through the voluminous pages of disclosures because they want to use the technology.”

Abbie sighed. “Guilty again. So how does GA get access to all this information?”

“We buy it. A lot of the websites and apps generate revenue by selling data. Facebook famously advertises that it will always be free. That’s because users pay for it by agreeing to share personal information.”

Abbie looked alarmed. “I thought personal information was shared on a no-name basis?”

“Yes, that’s true in general. However, GA is an NGO appointed by Congress for the exclusive purpose of developing presidential election polls and declaring a winner before all the states officially tabulate results.” Karl-Lin didn’t elaborate, but Congress allowed GA this access following elections starting in 2020 when incumbent presidents refused to immediately acknowledge defeat following insurmountable evidence that they had lost the election. In some elections, the stalling tactics resulted in riots and increased terrorism. Congress eventually recognized better polling methods were needed to manage voter expectations.

Abbie fiddled with her pen. “So, you’re telling me that personal data is shared with GA? And that’s in the terms and conditions?”

“Absolutely. It’s no secret, but people forget that this policy was instituted in 2056, so it’s been a while, and this is the first election GA was able to use personal information.”

“Why is that?”

“It’s taken a while to build and test the system.”

Abbie placed her pen on the desk. “I think I’m following, tell me if this is right. GA collects individual data from all the sources you mentioned and uses it to build a database of actual voters in representative districts. What happens when people die or move?”

“GA has access to government databases so we remove deaths as they occur. New people are added from the pool of existing voters. Relocation is determined by looking at voter registration records and is also indicated by online purchases and other transactions that involve addresses.”

Abbie took a sip from a mug with the CNN logo. “Our viewers may be alarmed at the invasion of privacy, I know I am.”

“I’m glad you raised that issue. I want to assure people that all the information is used only for election polling as mandated by Congress and is completely secure.”

“That may not be of comfort to people who are afraid of foreign meddling in our elections, but that’s another conversation. My next question is how do you know with such precision about someone’s actual presidential preference? People can register as a democrat but vote republican.”

“Quite right. That’s where social media, Amazon purchases, Twitter and so on come into play. People often make their political preferences known through a variety of actions.”

“You mean like Facebook postings or buying T-shirts and mugs with election slogans or logos?”

“Exactly so. Facebook comments, microblogging and photo sharing also may reveal a preference.”

Abbie looked perplexed. “Say someone posts a picture from a Republican or Democratic rally. They may be there as an observer with no preference. And they might buy something as a present or a joke.”

“Of course, that’s why there needs to be multiple examples before an individual is considered in support of a particular candidate.”

“Okay, I get all that, but what about someone who is on the fence, the person who is really undecided?”

“The number of undecided voters reduces significantly the closer we get to election day. That said, if our database categorizes someone as undecided, the system assigns a range of probabilities of voting for each candidate so the polling reflects their ambivalence.”

Abbie frowned. “What about turnout? Isn’t that a significant part of election results?”

“Yes, I was getting to that. Our published polling results are actually based on extensive analysis using Monte Carlo simulations.”

Abbie grinned. “Sounds like you’re gambling on the outcome.”

“Let me explain what I mean by that. I already mentioned that we use a range of probabilities for undecided voters. We also assign a range of probabilities for each person’s likelihood of voting. That’s based on past voting records and degree of commitment to the current candidate which is determined by our proprietary tool.” Other interviewers had pressed Karl-Lin to expound on the proprietary tool, but she had never revealed that it used CCTV, AI and facial recognition. That information would have ignited a firestorm of protest over privacy issues.

Abbie looked confused. “That’s a heck of a lot of what-ifs. How do you come up with one prediction?”

"The short answer is we come up with thousands of predictions. The basis of Monte Carlo testing is to run one prediction, or scenario as we call them, based on one set of variables. A variable is what you call a what-if. It's one of the assumptions that varies by person."

"I think I follow. You run a whole bunch of scenarios based on different probabilities."

"Right. Suppose we had one voter who was a die-hard Democrat and one who was a die-hard Republican. Further, assume each of these voters had five different probabilities of turnout. That would generate 25 different scenarios, each with it's own probability or likelihood of happening."

Abbie held up her mug so the logo faced the camera. "So, you run all these scenarios. Now what happens?"

"The short answer is that we take an average to predict who won a particular poll at that point in time."

Abbie took a sip and put the mug next to her laptop with an apple logo. "The average. Isn't that like what will happen about half the time?"

"It is, but the results of all the scenarios help us understand how reliable a particular prediction may be. There's always uncertainty in any poll. We're just trying to get a better gauge of voter behavior at a particular point in time."

Abbie crossed her legs and the camera panned out to show her sitting at a Parsons table. "What about election day?"

"We run a final poll on election day after voting ends on the west coast. That's used to announce the winner pending final verification by each state. CNN has its own poll as do others. The difference is that the GA poll is recognized by the GSA and other…"

"GSA is the General Services Administration which authorizes the release of funds for the new administration."

"Yes, that's correct. So, the relevant government bodies are instructed to start the peaceful transfer of power from an incumbent president to the president-elect. This process cannot be obstructed by the incumbent president as occurred for the first time in the 2020 election."

Abbie glanced down at her laptop. "Well, that's about all the time we have left. Thank you, Karl-Lin Lee, for tackling a very complex subject. I have a much better idea of what GA is doing, but don't ask me to repeat it. This is Abbie Filipe for CNN."

Karl-Lin thanked Abbie and they traded pleasantries for a few minutes off-air. Then she shut down her computer, picked up the glass block and whispered to herself, "The foibles of human nature—x plus x, chromosomes, she loves algebra."

Karl-Lin in fact has no chromosomes—just circuits—the world's first axuary. Karl-Lin pulled on the hematite necklace causing it to glow twice then fell into sleep mode.