

Kai-Fu Lee the Pied Piper of AI comes home

(As published in The Oak Ridger's Historically Speaking column the week of July 15, 2019)

It was a huge disappointment to learn that I would not be here when Kai-Fu Lee came to Oak Ridge. Fanny and I were on a previously scheduled trip. We are enjoying retirement and travel, but missing this occasion was tough. So, I asked Benita Albert to please write a Historically Speaking column for me on the amazing day. She agreed and now you can enjoy her insights.

Did you know? May 6, 2019 was proclaimed "Kai-Fu Lee Day" by both Oak Ridge Mayor Warren Gooch and Anderson County Mayor Terry Frank. The occasion was Lee's return visit to his former schools: St. Mary's Catholic School, Jefferson Middle School (formerly known to Kai-Fu as Jefferson Junior High), and Oak Ridge High School. His visit came just one month short of his fortieth ORHS graduation. Many members of his ORHS Class of 1979 and the Oak Ridge community filled Pollard Auditorium to hear him speak on "Making Artificial Intelligence Work." It was an incredibly full day for Kai-Fu, but it was a rewarding experience for all who were privileged to meet and/or hear him.

Kai-Fu is a world expert on artificial intelligence, a venture capitalist, and author of a best-selling book, AI Superpowers: China, Silicon Valley, and the New World Order. His resume includes previous work with Apple, Microsoft, Silicon Graphics, and Google where he became the president of Google China. Kai-Fu's doctoral dissertation from the late 1980s involved the development of a speaker independent, speech recognition system.

In his community talk, he discussed continuing his dissertation research with Apple and marketing a speech recognition technology which was named Casper. However, Universal Studios considered the name a copyright infringement of their investment in Casper (the Friendly Ghost), and thus, the new name chosen by Apple was Siri. Wow! Kai-Fu's genius has been a part of almost everyone's life in the succeeding years since the early 1990s.

It was my privilege to meet Kai-Fu at the airport on Sunday, May 5th, and to provide him with a quick tour of Oak Ridge. Forty years later, Kai-Fu was challenged to locate his childhood home on Baltimore Drive, but he enthusiastically remembered Big Ed's Pizza (too bad it was closed.) The tour continued on to Oak Ridge High to view a much larger, updated version than the ORHS he attended as well as viewing the Friendship Bell site, inspired by the mother of one of his ORHS friends, Ram Uppuluri.

"Kai-Fu Lee Day" began with a tour and talk at Jefferson Middle School. He visited the innovative Aeronautics and Coding classroom, viewing the drone technology the students construct, code, and fly and also the Makerspace Laboratory, a very popular student resource, housed in the JMS library. In a question and answer session, student questions included: "Are 'deepfakes' real?" and "How do people in China purchase things when their battery dies since all transactions are made via smart phones?" The latter question's answer was that most people carry portable chargers, and charging stations are readily available. If you are not aware of 'deepfakes,' check the internet for further information on this artificial intelligence development. You might want to know.

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Kai-Fu's second stop was at ORHS where some of what he toured included the AP biology labs, the digital art classroom, the orchestra, and the robotics lab. He listened to oral presentations by Math, Science, Computer Science Thesis students, David Joy and Ethan Brady. Ethan and a partner, Eagle Yuan, studied the foraging behavior of the black soldier fly. David Joy's project was recently chosen as the runner up to first place at the Southern Appalachian Science Fair earning him a trip to the International Science Fair in Phoenix. David's project involved developing a mathematical model to predict where radioactive dosages in humans will collect and what dosages they will receive. Kai-Fu commented that he was impressed when he asked what he described as "senior-college-level questions," and the students handled them very well.

The second hour at ORHS included a talk to numerous classes in the ORHS auditorium where Kai-Fu discussed artificial intelligence and its mathematical foundations. Kai-Fu chose to highlight the loan/mortgage business warning that risk assessor jobs are in danger of extinction. AI can store so much loan applicant data, that a risk assessment study becomes a 3,000-dimensional graphical analysis problem that with AI's power gives stunningly accurate risk results.

One interesting audience question referenced Sophia, the social humanoid robot. Kai-Fu said that though Sophia appears to quite human, she has no emotional basis, she knows only what she has been provided from the data sources she utilizes. Once again, this is a suggested, interesting internet research project to view the realistic appearance of Sophia and her capabilities.

Kai-Fu cautioned students to look at what AI will replace as future jobs and advised students to emphasize studies and career paths that are not routine-task oriented, for those are robotic-replaceable jobs. Given his tight schedule for the day, Kai-Fu suggested that the many ORHS students who were seeking more input from him after the meeting follow him to his waiting car outside. He continued to answer questions as they walked. It was as if he was the "Pied Piper of AI" continuing to share and enjoy their questions. Kai-Fu frequently has expressed his love for teaching and for working with young people.

The afternoon spent at St. Mary's School included welcoming ceremonies and honors as well as school tours and talks with students. He visited the first-graders' recycling project and observed seventh-graders completing an assignment on plate tectonics using their Chromebooks. Kai-Fu told the seventh-grade students that he and his team at Google created key components for Chromebooks and the Office Suite that they were using. Elementary grades K-4 heard him speak on China and other countries that he has visited. Middle school students wanted to hear about AI as well as get feedback on their recent Southern Appalachian Science Fair awarded projects. Kai-Fu teased the students by telling them that he worked at Apple "between jobs," meaning that Steve Jobs was not at Apple during the time he was there.

One introspective 7th grader asked if he had ever encountered a difficult time in his life and how he was able to overcome it. Kai-Fu relished his time with the students of Oak Ridge expressing later that it was enlightening, engaging, and much fun.

The Oak Ridge Public Schools Education Foundation was honored to be the primary host for Kai-Fu's visit and scheduler of his activities. With additional support from Oak Ridge Associated Universities, the Oak Ridge

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National Lab, and the Friends of the Oak Ridge National Lab, Kai-Fu was feted at an evening reception and talk for the Oak Ridge community. During the reception, Kai-Fu signed numerous copies of his AI book, greeted Oak Ridgers, and reunited with many former ORHS classmates.

Welcomed by a standing-room-only crowd, his talk, "Making AI Work," was entertaining, informative, and challenging. He began his talk with a clip from a 1991 TV interview on ABC's "Good Morning America." It was on this show that a voice-simulation Casper computer (so named at the time) was unveiled by Apple CEO John Sculley and Kai-Fu. Kai-Fu warned his Apple bosses at the time that the product was not 100% ready, conservatively estimating it as 90% reliable.

To decrease the possibility of failure on live TV, Kai-Fu brought two computers and connected them, thus resetting the failure rate to a safer 1% in the demonstration. ABC TV host Joan Lunden was astounded when Casper (plus one more hidden Casper) correctly responded to various commands and then appeared to ask her for a date. She had posed a question about the capability of scheduling meetings when Casper said, "What day would you be able to meet?"

Kai-Fu's sense of humor, low-key technical explanations, and thought-provoking assertions were on full display. No wonder he is in great demand as a speaker worldwide. It was a rare privilege to hear him describe how AI will affect future careers and personal conveniences.

Going back to an earlier-referenced 3,000-dimensional data accumulation process to determine loan risks, Kai-Fu listed a few, obvious data sources such as credit ratings, job mobilities, and age. However, he also revealed a less obvious bit of data, with high correlation for loan approval, as personal phone charging habits—those who consistently keep phones at higher charge levels are better loan risks.

Kai-Fu insisted that he cannot predict the future of AI nor necessarily set timelines, but he believes the world of work, educational training, and lifestyle conveniences and needs will face big changes. The cover of his book puts it this way, "(with AI implementation) we face some of the most profound changes in human history."

When I asked Kai-Fu if he planned to write another book, and if so, what would it be, he responded that he would love to write a book on the future of education and AI's role in supporting and enhancing learning. Just one of his many successful companies, a subset of his investment firm, Sinovation Ventures, involves marketing targeted, online tutorial services for students—an extremely popular option for Chinese parents.

His observations on AI's assistance in providing educational services were worth the price alone of his book to me, his former, so-very-proud-of-him teacher.

I am grateful to Kai-Fu for sharing his time and knowledge with us, and I can only hope that he will be able to return again soon. Right now, the world needs him in Tampa, Dubai and Paris, just a few of the next appointed places in his current travels and global outreach.

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Wow, just wow!!! What an amazing interaction. Oak Ridge is a city of outstanding and wonderful scientific discoveries that all too often are just taken in stride and not even thought of as unusual. Kai-Fu Lee and Benita Albert are products of Oak Ridge, each amazing in their own way and in worlds apart but joined in mutual admiration and appropriately so.

In my mind, Benita is uniquely insightful and the perfect choice to bring us the essence of Kai-Fu Lee's return to Oak Ridge. What joy, what pride she has and what a tremendous connection they share. Again, you have just been shown something in which all Oak Ridgers can take pride. One of our own is changing the world of Artificial Intelligence! And one of our own helped him get started!



A remake of a photo from 40 years ago

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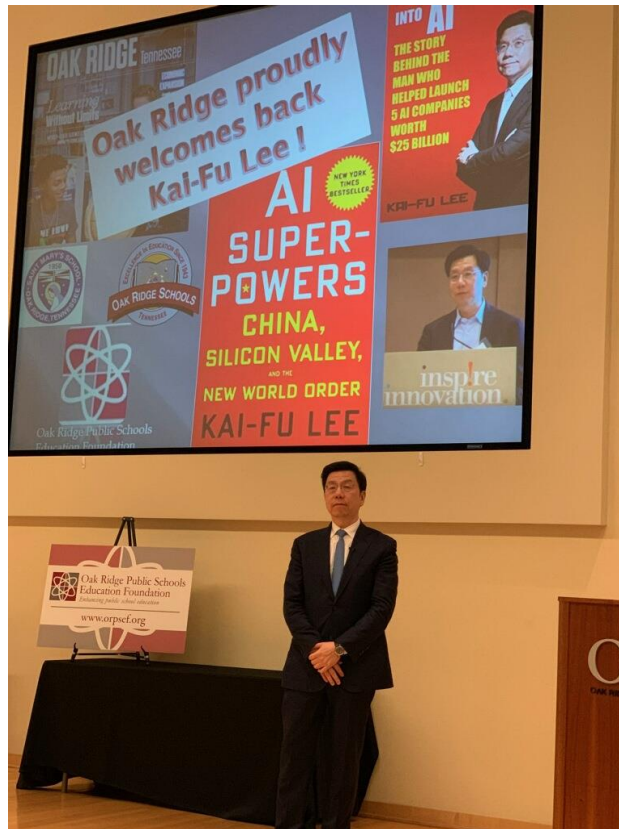
The original photo of Kai-Fu Lee, Ram Uppuluri and Phillip Yoo



Kai-Fu Lee interacting with a class of 8th graders

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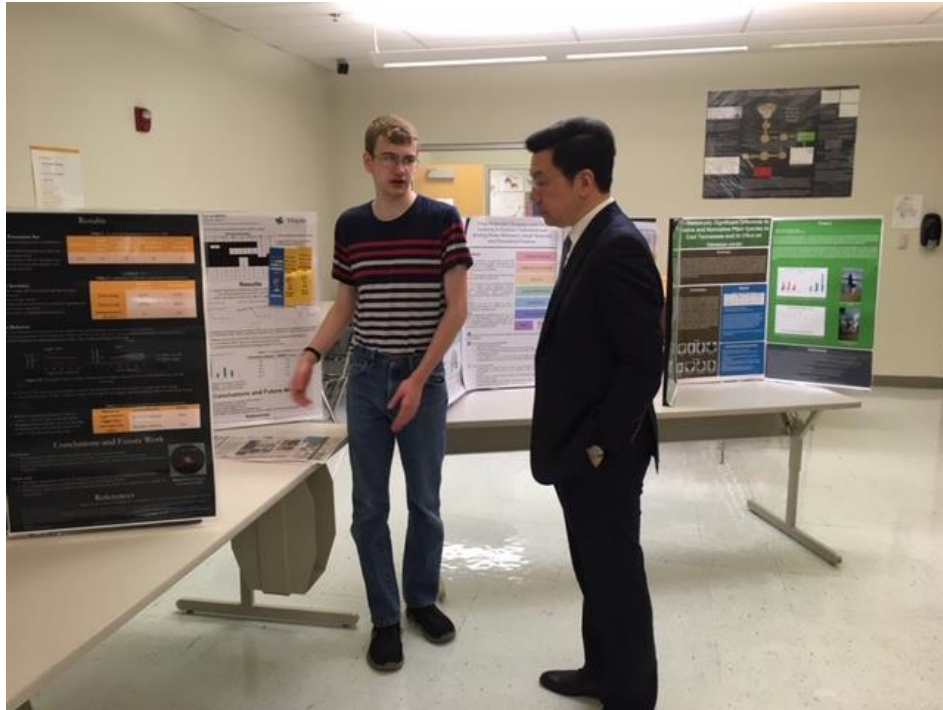
Kai-Fu Lee being introduced by Benita



Classmates, Bill Collier, Larry Huber, Diane Ray, Amanda Rowcliffe, Kai-Fu Lee, Benita Albert, Scott Jamison, Wiley Peck, Phillip Yoo, Priscilla Yee, and Ram Uppuluri (not pictured)

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David Joy, a Thesis student headed to the International Science Fair presenting his project to Kai-Fu Lee