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Sebastian Thrun: What's Next for Silicon Valley?

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Selected text only

Mr. Thrun earned a Ph.D. in computer science from the University of Bonn, "the 53rd of 53 German computer-science schools," he adds. His focus was on artificial intelligence, a field that failed in the 1980s with a rules-based approach—because humans could never come up with all the rules a machine needed—but then flourished in the mid-90s when machines had to learn the rules by themselves, by trial and error, almost like an infant.

Mr. Thrun left Germany in the mid-90s for Carnegie Mellon—looking "for the lack of authority, unlike Germany"—to build intelligent machines. His mentor at CMU, Tom Mitchell, told him, "Pick a problem that matters to society." So he helped create robots, including a "nursebot" to assist the elderly in nursing homes and robotic tour guides, where one named Minerva led thousands of visitors during a stint at the Smithsonian National Museum of Natural History. This required a cross-discipline education including nursing, psychology, material science and whatever else was required to help machines learn about the real world. These were hard projects, he says. "Just let go, trust your ability to learn, more [than] holding on to the things you've achieved—and that became the central theme in my life."

He eventually found his way to Stanford, leading the university team's entry in the 2005 Defense Advanced Research Projects Agency (Darpa) Grand Challenge to create an autonomous vehicle that could navigate 132 miles through a desert. He insisted on a blank slate, letting student imaginations run wild as opposed to proving that some professor's arcane research actually works. "It's sad that we never get trained to leave assumptions behind," he says. Stanford won by 11 minutes.

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If you can't tell already, Mr. Thrun is a restless sort. "I take all day to climb mountains and then spend about 10 minutes at the top admiring the view."

Yet there is one project he's happy to talk about. Frustrated that his (and fellow Googler Peter Norvig's) Stanford artificial intelligence class only reached 200 students, they put up a website offering an online version. They got few takers. Then he mentioned the online course at a conference with 80 attendees and 80 people signed up. On a Friday, he sent an offer to the mailing list of a top AI association. On Saturday morning he had 3,000 sign-ups—by Monday morning, 14,000.

In the midst of this, there was a slight hitch, Mr. Thrun says. "I had forgotten to tell Stanford about it. There was my authority problem. Stanford said 'If you give the same exams and the same certificate of completion [as Stanford does], then you are really messing with what certificates really are. People are going to go out with the certificates and ask for admission [at the university] and how do we even know who they really are?' And I said: I. Don't. Care."

In the end, there were 160,000 people signed up, from every country in the world, he says, except North Korea. Rather than tape boring lectures, the professors asked students to solve problems and then the next course video would discuss solutions. Mr. Thrun broke the rules again. Twenty-three thousand people finished the course. Of his 200 Stanford students, 30 attended lectures and the other 170 took it online. The top 410 performers on exams were online students. The first Stanford student was No. 411.

Mr. Thrun's cost was basically $1 per student per class. That's on the order of 1,000 times less per pupil than for a K-12 or a college education—way more than the rule of thumb in Silicon Valley that you need a 10 times cost advantage to drive change.

So Mr. Thrun set up a company, Udacity, that joins many other companies attacking the problem of how to deliver the optimal online education. "What I see is democratizing education will change everything," he says. "I have an unbelievable passion about this. We will reach students that have never been reached. I can give my love of learning to other people. I've stumbled into the most amazing Wonderland. I've taken the red pill and seen how deep Wonderland is."

"But Wonderland is also crazy!" I interrupt.

"So?"

Ah, another Thrun project that can radically disrupt the old way of doing things. "But isn't that exactly what we should be doing? I'm going part-time at Google to pursue this. I really care. Isn't this the American history? Can't you pinpoint almost everything that happened back to some technological breakthrough?" Indeed, this is going to disrupt public schools and teachers unions and universities and tenured professors and so on, Mr. Thrun effectively interjects: "The dialogue always focuses on what's going to happen to the institutions. I'm totally siding with the students."

I ask why he always takes on these quantum changes instead of trying something incremental. "That's what Google taught me. Aim higher. Udacity is my playground—to radically experiment and find out. I've seen the light."

Now Mr. Thrun is talking like a true Silicon Valley entrepreneur. "The AI class was the first light. Online education will way exceed the best education today. And cheaper. If this works, we can rapidly accelerate the progress of society and the world. If you think Facebook is neat, wait five to 10 years. So many open problems will be solved."

I've met a few others like Sebastian Thrun. When you ask them why they took on a huge challenge, they ask: Why not?

Mr. Kessler, a former hedge-fund manager, is the author most recently of "Eat People" (Portfolio, 2011).

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