UC Berkeley's Fastest-Growing Class Is Data Science 101; University creates a division to study the science of mining digital information; 'It feels like a revolution'

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FULL TEXT

BERKELEY, Calif.--At the University of California, Berkeley, the fastest-growing class on campus is introduction to data science.

A month-old major in the field that merges aspects of computer science and statistics to mine the growing troves of data on everything from traffic patterns to the habits of social-media users has attracted interest from 1,000 students.

UC Berkeley on Thursday announced plans to create a new Division of Data Science and Information focused on the discipline, which school officials called the biggest reorganization in several decades. The aim is to make every student proficient not only in reading, writing and arithmetic--but data.

"Data science is blowing up," said Anna Nguyen, a third-year public-health student. "It just feels like a revolution is happening and everyone wants to be a part of it."

Data-science classes started popping up around the country a few years ago. Today, 349 schools offer some type of data major, said Renata Rawlings-Goss, co-executive director of South Big Data Innovation Hub, one of four regional hubs promoting cooperation on big-data projects funded by the National Science Foundation. In October, the Massachusetts Institute of Technology announced a $1 billion investment in a college of computing that also aims to integrate all of the school's disciplines with computing and data science.

Behind the shift is the tidal wave of data collected by a new generation of internet-connected instruments that are generating an estimated 2.5 quintillion bytes of data every day--that's 25 followed by 17 zeros. The ability to synthesize that information and make inferences and predictions from it draws on modeling skills from statistics and programming skills from computer science. It also demands expertise in whatever subject the data is from--which is why the attraction to the field is so broad.

The academy is years behind industry needs in the field, so employers like Alphabet Inc.'s Google say they can't find enough people with data-science expertise to fill jobs.

Berkeley's goal isn't just to train data scientists, but to get students from other disciplines, including the humanities and social sciences, to also learn what a data orientation can do for their work.

"Some degree of data analytics is simply part of what it means to be educated today," said David Culler, a professor of computer science who has played a leading role in developing the university's data programs and curriculum.

As recently as four years ago, undergraduates at Berkeley who wanted to study data science met in ad hoc study groups and cobbled together double and triple majors.

In the fall of 2015, the school introduced a class called Foundations of Data Science--or Data8 for short. One hundred and nine students enrolled. Word spread. This semester, 1,295 students from 100 majors are taking the class.

Data science is the fastest-growing program in the history of Berkeley, said Provost Paul Alivisatos. "I have been

here for 30 years," he said. "I've never seen anything like it."

On a recent Friday, Professor David Wagner, who teaches Data8, projected the image of a marijuana leaf on a giant screen along with Wyoming poll numbers on legalizing weed.

"Why are there 607 respondents?" Dr. Wagner asked a sea of students in the class. "How did they get a 4% margin of error?"

Dr. Wagner walked students through basic concepts of statistics, frequently stopping the class to ask questions and urging them to confer with their classmates to come up with the answer.

"Computer science used to be the big thing but this is really hot right now because it's so accessible. They want people to succeed," said Jordan O'Rourk, a sophomore who is studying cognitive science but has plans to go into the fashion industry.

"I think this is a great start but we needed this a couple years ago," said Maggie Johnson, vice president of education and university programs at Google, which is helping to fund the program. Considering the high demand across the tech industry, "the pipeline is still really small."

Madeline Wu, now a software engineer at Lyft Inc., grew frustrated a few years ago trying to find computer-science classes at Berkeley that would support her work in biology. Then she learned about Data8 and signed up.

She learned the concepts of inference, some basic coding in Python programming language and the know-how to ask questions of data that she said was a new way of thinking for her.

"If you're working on any product, there are marketing people, engineers, business people and lawyers," Ms. Wu said. "The one thing they can share and understand is definitely the data."

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