Traditionaly, software is built by programmers who consider the possible situations and write rules to deal with them. But recently, many applications have been created by machine learning: the programmer is replaced by a trainer, who shows the computer examples until it learns to complete the task. This shift in the way software is built is opening up exciting new possibilities and posing new challenges.

Peter Norvig is a Director of Research at Google; previously he directed Google's core search algorithms group. He is co-author of Artificial Intelligence: A Modern Approach, the leading textbook in the field, and co-teacher of an Artificial Intelligence class that signed up 160,000 students, helping to kick off the current round of massive open online classes. He is a Fellow of AAAI, ACM, the California Academy of Science and the American Academy of Arts & Sciences.