Das Ende der Kontrolle
Wie Machine Learning die Softwareentwicklung transformiert

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Machine Learning
Google is living a few years in the future and sends the rest of us messages.
—— Doug Cutting
Hadoop Founder

Artificial Intelligence Takes Off at Google
Number of software projects within Google that uses a key AI technology, called Deep Learning.

MapReduce Programs in Google’s Source Tree

Bildquellen: Ilan Horn, Google Inc.; Bloomberg Technology
“The more people who think about solving problems in this way, the better we’ll be,” says a leader in the firm’s ML effort, Jeff Dean, who is to software at Google as Tom Brady is to quarterbacking in the NFL. Today, he estimates that of Google’s 25,000 engineers, only a “few thousand” are proficient in machine learning. Maybe ten percent. He’d like that to be closer to a hundred percent. “It would be great to have every engineer have at least some amount of knowledge of machine learning,” he says.

Does he think that will happen?

“We’re going to try,” he says.
Engineering Evolution

Algorithmen → + Daten → Algorithmen → + Modelle → Algorithmen
Zustände vs. Wahrscheinlichkeiten
Rauschen

Engineer
Operative Daten

Data Scientist
Nutzerhandlungen
Optimierung

Engineer
Operative Daten

Data Scientist
Nutzerhandlungen

‣ Click-through Rate
‣ Matching bei Bilderkennung
‣ Korrektheit von Vorhersagen
Geben und Nehmen

Engineer
System

Data Scientist
Machine Learning

Daten
Modelle

Algorithmen

Insights
Transformation

Keine Kontrolle

- Unterstützung
- Vereinfachung
- Optimierung
Open Source / Engineering Community

Intelligent Empowerment – Thoughtworks

“THE MACHINE LEARNING MODEL FEELS LIKE A LIVING, BREATHING THING.” SAYS CHRISTINE ROBSON. “IT’S A DIFFERENT KIND OF ENGINEERING.”
“Machine learning in 2016 is creating brilliant tools, but they can be hard to explain, costly to train, and often mysterious even to their creators.”
— John Vincent (@TheVerge)
Integration

data4engineering

engineering

data
Best Practices

1. Denkt daran, dass Daten von Algorithmen weiterverwendet werden sollen!
2. Diskutiert das Datenmodell service-übergreifend!
3. Bindet den Data Scientisten in das Team ein!
Vielen Dank für eure Aufmerksamkeit!

#data4engineering