Machine Learning—CIVICA Workshop

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Course Description

The interest in Machine Learning is really spiking in governments, academia and business alike. The promise of automated decision making or self-learning data analysis algorithms is already making a difference in practice.

Our goal is to build a solid understanding of what Machine Learning is. How you can build simple Machine Learning algorithms on your own. And—most importantly—how you can use Machine Learning in your own work. When taking this course some participants will be surprised to learn that Machine Learning already was part of their work (e.g. regression models). To some extent we want to demystify machine learning and set a solid foundation which allows you to build upon (e.g. by taking the Deep Learning course the next day).

The course will alternate between lecture style input and applied workshop phases. We will provide R Markdown workbooks that make it easy to implement your first Machine Learning models. This class relies on R, but we expect no prior R knowledge. We will work with the easy to use RStudio Cloud computing environment. Some knowledge of basic linear algebra is helpful.

Course Objectives

1. Understand what Machine Learning is.
2. Apply Machine Learning algorithms.
3. Think about how you could (or already do) use Machine Learning in your own work.

Literature

Goodfellow, Ian, Yoshua Bengio, and Aaron Courville (2016). *Deep Learning*. http://www.deeplearningbook.org. MIT Press.