

AHEAD  
THROUGH  
KNOWLEDGE

# Welcome to the World of Data Science

## PROFINIT

### OUR MISSION

Our main and foremost goal is to bridge the gap between you, the leading business data analyst in your company, and the vast amount of mind-blowingly complex data your company has.

You are the expert in your field, you understand the business needs of your company, and you know where the money is. Your company gathers a huge amount of data about your clients. Somewhere in all those terabytes is everything about your clients – their status, their needs, their preferences, even their personality traits, habits, and relationships. If only you could get those pieces of information in an easily accessible format loaded into the tools you are familiar with...

### OUR TOOLBOX

When selecting tools for our technology toolbox, we are pragmatic. We like exploring prospective technologies, but in production we adapt to the technologies most commonly employed by our customers. In big data, this means the Hadoop + Spark technology stack (we are partners of both the main vendors, Hortonworks and Cloudera), but we have experience with cloud computing architecture as well (AWS, Azure). In data science, we build on open source technologies from both R and Python Universe because of their rapid progress and widespread use. However, if your company standard is Oracle DB + Excel, we can handle that as well.

### OUR STRATEGY

Data science is a new field, and we often have to do things for the first time. In order to reduce both risk and costs, we respect the principle: fail fast, fail cheap. Before we start a project, we make a simple and inexpensive proof of concept. If the PoC shows potential, we continue with a pilot and a full implementation project. But our strategy does not end there. Some projects are suitable for further development into a solution or even a standalone product.



# OUR ALGORITHMS

## Salary detector

Suppose you are a retail bank. You surely want to know details about your clients professional lives. With our model, you can detect employer-employee relationships in transaction data so you can tell which of your clients work together for a single company, who is a newbie, who is the boss, who got promoted, and who got fired. You can cluster your clients based on their company profile and group together companies that share a portion of their employees. You can spot various events in the life of a client or a company and react properly to these events in marketing or risk scoring.

## Household detector

In telecommunications as well as banking, you have enough data to reconstruct family relationships between clients. Based on data concerning card payments, phone calls, and location, you can correlate people in time and space. If you add some simple demographics, you end up with a surprisingly precise model that finds a person's spouse, parents, siblings, etc. In some countries, this sort of data mining cannot be legally employed, but in others, regulations are not so strict. So, the bank can use this knowledge to improve a person's risk score based on her family members, or a telecommunications operator can make a better targeted marketing offer.

## Early warning system

Do you want to be warned before something goes wrong in your corporate data warehouse? Any undetected data quality failure in a large DWH environment can come at a painful cost. We have a predictive model that can detect anomalies in data warehouse processes. Our system can inform your servicemen of a wide range of irregularities for all periodically repeating jobs and processes. The system is based on advanced time series modeling and complex anomaly detection, but it is still easy to maintain without any special knowledge of statistics or data science.



## Instalment detector

The majority of the profit in modern retail banking comes from loan products. Unfortunately, not all of your clients borrow money from you. Our model is built to detect all payments going from your bank to other banks and financial institutions to pay for existing loans elsewhere. The whole installment loan battlefield can be laid open in front of your eyes. This is a perfect opportunity to offer your clients a loan transfer or consolidation through your bank.

## Interest rate optimiser

Setting interest rates is a complicated problem. If you set rates too low, you are cutting your profit. If you set them too high, your clients won't accept them or will soon move on. The competition is very stiff, especially online. Most banks use risk-based pricing, assigning each class of clients interest rates according to the probability of default. This method can be improved. By giving clients who are more price sensitive a little bonus at the expense of clients who are less price sensitive while maintaining the average interest rate for all risk classes, we can improve acceptance, reduce turnover, and boost profit while still complying with strict banking regulations.

Equa bank



PROFINIT EU

Tychonova 2 / 160 00 Prague / Czech Republic

profinit.eu/en

Profinit

Profinit SW Services