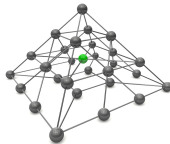


# CM Data Research



Christopher Moik, MSc.

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# Structure of Presentation

- 1 CM's Mission
- 2 Products
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- 4 Areas of Research
- 5 How CM Works
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In today's increasingly complex world clients face difficult decisions and do not only depend on their instincts but also on objective information and analysis. CM's mission is to help clients in making complex decisions by providing data analytics and machine learning in the areas of economics, business administration, technology and social science.

- Data analytics and statistics in the areas of economics, business administration, technology and social science
- Causal analysis
- Data mining
- Predictive modelling and machine learning
- Algorithms
- Advanced Data Systems Analysis (ADSA)
- Quantitative business intelligence
- Knowledge and data management

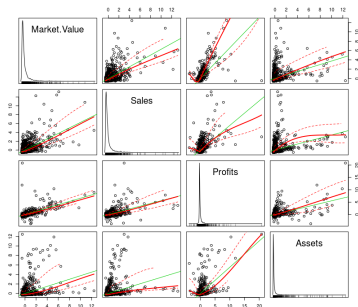
- Research studies (short-term)
- Lectures and consultancy (short- and long-term)
- Software applications (long-term)
- Integration of algorithms and data tools into a company's data section or automated production and manufacturing processes (long-term)

# Areas of Research

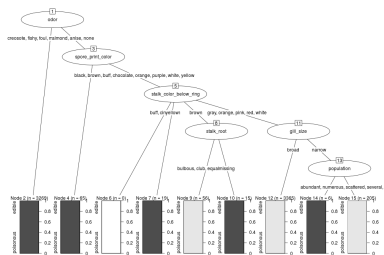
## Economics

- Productivity and labour
- Industry and manufacturing
- Finance and investment
- Markets and prices
- Energy, resources and commodities
- Infrastructure, public goods and social welfare
- Financial crisis
- Digitization
- Environmental economics
- Development economics
- Demographics

- Business processes
- Strategic decision-making
- Price optimization
- Input factors
- Process optimization
- Marketing
- Human resources
- Logistics
- Knowledge management



- Data analytics and statistics
- Machine learning algorithms
  - Regressions
  - Decision trees
  - Rankings
  - Neural networks
  - etc.
- Data Mining
- Data extraction and preparation
- Databases
- Data applications
- Data management





# Areas of Research

## Other Areas

- Poll analysis
- Political risk analysis
- Military security
- Cyber security

# How CM Works

## *Step 1*

Planning the project

Discussing the scholarly literature

Formulating research questions and hypothesis

Designing the statistical model

## *Step 2*

Accumulating quantitative data

Data clearing

Data manipulation

Merging datasets

## *Step 3*

Data mining and exploration

Analysis using statistics and algorithms

## *Step 4*

Testing and evaluation of the model

Placing the results into the theoretical context

- Intensive communication and cooperation with client before and during the project
- Embedded in the business processes
- Briefings and consultancy
- Frequent updates
- Feedback



- Businesses
  - Small and medium scale businesses
  - Large corporations
- Governments
  - Ministries
  - Security agencies
  - Chambers
- Non-governmental organizations
  - Political parties
  - Educational institutions
  - Civil organizations
- Media organizations

- Predicting credit default
- Forecasting famines
- Implementation of ADSA modules
- Poll analysis of the Austrian national elections
- etc.

- Empirical data analysis backed by theoretical considerations
- Difference between phenomenological laws and theoretical laws
- Objectivity, reliability and validity
- Deduction, induction and abduction as complementary methods
- Data analysis based on structured and replicable procedure
- Knowing the limits of machine learning and prediction

- Educational background in economics, political science and social science
- Past experience in academic research at public and private institutions
- Working as a data researcher and lecturer at the Austrian National Defence Academy
- Focusing on statistics, econometrics and data science

- CM's main mission is to **contribute to economic growth and social well being** by providing objective data analysis and knowledge to businesses, governments and organizations.
- CM provides **data analytics and machine learning** in the area of economics, business administration, social science and technology.
- CM's products can be implemented in a variety of forms such as **research studies, consultancy, software tools or algorithms** integrated into automatic manufacturing process.
- CM provides a variety of services including **intensive communication and cooperation, briefings, consultancy and feedback.**