THE crunch ACADEMY

Crunch Analytics
Training Overview 2019

Why training?

Companies across industries are looking for skilled people to help them extract more business value from their data. They need knowledgeable business managers to lead the way, as well as programmers & analysts that master essential data science techniques. Finding these talented people is not an easy task due to demand far exceeding availability. As solely relying on hiring new people often leads to an unsatisfying result, training your current staff is an essential complement to your hiring strategy. It enables you to have the right skills in play to grasp the full potential of advanced analytics and AI.

What type of trainings do we offer?

Building a great team ready to apply various data science techniques, requires bringing together three roles. It requires skilled analysts and programmers to team up with business managers that understand their organisation and can identify the possible business value of advanced analytics and AI. That is why we provide three tracks, each adapted to the needs of each specific role.

Programmer

Your day-to-day job is writing code and/or designing software architectures. You are at the source of the data in your company which makes you a great candidate to make the transition to data scientists.

- Web Developer
- Application Developer
- Back-end Developer

Machine Learning Academy

You will learn the tools and techniques of Machine Learning so you can use Data Science in their day-to-day job and create new opportunities for your company.

Date: 15 Nov – 13 Dec 2019
Location: Brussels – Belgium

Analyst

You work with data on a regular basis and uses traditional business intelligence tools to analyze and manipulate data. By improving your technical skills you can start to become a data scientist.

- Business Intelligence Analyst
- Business & Financial Analyst
- Consumer Insights Analyst

Data Science Course

You will learn about the powerful tools and techniques offered by Data Science so you can draw even more insights from your data.

Date: 04 Okt – 08 Nov 2019
Location: Brussels – Belgium

Business Manager

You are responsible for the performance of the business or engineering team and are looking for new opportunities to optimize the impact their efforts.

- Marketing & Sales Manager
- Operations Manager
- Financial Manager

AI for Managers

You will be introduced to the world of Data, AI and Machine Learning, dive into real-life business cases and learn how to effectively lead/collaborate with data scientists.

Date: TBD
Location: Ghent – Belgium

Let our clients speaks for themselves

Thomas Mons

Director of Engineering, In The Pocket

Our goal is create digital products that make people happy and makes businesses grow. Within 3 years all digital products will contain some form of artificial intelligence. Hence, it is essential for us to keep up with these technologies!

+ Why choose Crunch?

- Embrace the shift towards Artificial Intelligence to stay relevant to users
- Build the ability to identify Machine Learning opportunities
- Strenghten and maintain human capital

Kurt Delaplace

Team Lead, In The Pocket

I wanted to have a better understanding of Machine Learning, to enable me to spot the opportunities to use this new technology within my projects. Participating in the sessions by Crunch Analytics has helped me to guide my team in the right direction, and improve the way we build applications.

+ Why choose Crunch?

- Get a clear understanding of how Machine Learning works
- Improve products using Machine Learning
- Be able to lead your development team better

Michael Warner

Integrations Engineer, Showpad

Like many other companies Showpad has not remained blind to the opportunities offered by data science and machine learning. My participation in these sessions has allowed me to apply machine-learning tools and techniques in my day-to-day job, moving closer to a role as a fully fledged data scientist.

+ Why choose Crunch?

- Full hands-on materials, examples and notebooks you can keep for later
- Perfect pace, not too fast nor too slow, straight to the point
- Learn from very knowledgeable mentors, always available to answer questions and help out wherever possible

Kerensa Tiberghien

Clinical Data Scientist, MoveUP

At moveUP we are moving from expert-driven to data-driven predictions to offer the best suited rehabilitation therapy for each our patients. Participating in these training sessions was the ideal way for me to acquire better insight into to possibilities offered by machine learning within this context.

+ Why choose Crunch?

- Gain the necessary insights to prepare for your data science project
- Ask and discuss your challenges with the mentors
- Hands-on training means you will be able to really apply Machine Learning afterwards

Ready for some training?

We want to help you create business impact through Data Science and AI. We believe that training your people is an essential component in realizing this objective. Are you interested in one of our training courses? Let us know by mail or request your training offer via the website:

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hello@crunchanalytics.be
+32 496 53 70 14

THE crunch ACADEMY

The Machine Learning Academy

For the programmers:
Make the shift towards Machine Learning & AI and stay on the forefront of your field.

What will you learn?

+ Python Essentials for Machine Learning

Basic data types, as well as using Numpy and Pandas to wrangle data in Python. Perform state-of-the-art explanatory and predictive statistical analytics in Python. Construct your own machine learning and AI models in Python, tailored and tuned to your specific business setting.

+ Creation of Models Using Sklearn

Sklearn rightfully is one of the most popular packages to create data science models, after these sessions you will be sufficiently proficient to use this package.

+ Understanding of Data Science Concepts

Knowing what constitutes a predictive model, using different models for different challenges, knowing the lingo of a data scientist,... Obtain insights and intuitions in the inner mathematical methods behind these applications. Use these understandings to easily apply machine learning techniques in other programming languages. Build a solid theoretical foundation allowing you to master new developments and techniques in this fast evolving field. Use your modeling techniques to successfully solve business intelligence questions.

+ Deep Dives into Natural Language Processing & Neural Networks

Our in-house experts in NLP & Neural Nets will guide you into the world of word embeddings, topic modeling, deep learning and convolutional neural nets. For both topics, you will start with an introduction of the core concepts, an overview of the current state-of-the-art techniques being developed and end with one big use case, which you will solve together.

About the course

Five full days of training, spread across five weeks will teach you everything you need to know to start creating your own data science models.

To enroll in this course, you are **required to have a background in programming** (preferably Python). If you do not, we recommend our Data Science Course for Analysts.

The workshops consist of presentations given by machine learning experts, these presentations are followed by **hands-on training** exercises using interactive browser based notebooks (Jupyter, Python).

This course is focused on letting the student **acquire practical skills**, rather than an abstract theoretical course.

Practical Info

Dates Fall Session: fri 15/11, fri 22/11, fri 29/11, fri 06/12, fri 13/12

Where: Munt 6, 1000 Brussel, Belgium

Duration: 9:00 – 12:30 and 13:30 – 17:00

Language: English

Price: € 1.495 pp. excl. BTW

Good to know

+ Breakfast & Lunch included
+ Bring your own device

Full program of the Machine Learning Academy

THE crunch ACADEMY

DAY 1

+ Basic 1 – The world of data science

- Data science 101
- The core concepts of the data science world
- Moving from descriptive to diagnostic, predictive and finally prescriptive analytics

+ Basic 2 – Python essentials for Data Science

- Python Programming basics (data types, logical & conditional processing)
- Python Numpy and Pandas modules
- Data manipulation and wrangling in Python

DAY 2

+ Basic 3 – Descriptive Analytics & Visualisation

- Summary techniques for data exploration
- Data communication tips & tricks
- Concise data visualisation and exploration using
- Python Seaborn & Matplotlib

+ Basic 4 – Predictive Analytics & Inductive Statistics

- Inductive/predictive statistical modeling
- Central Limit Theorem and estimation theory
- Hypothesis testing with Analysis of Variance

DAY 3

+ Basic 5 – Machine Learning with scikit-learn

- Basic concepts of machine learning and modeling
- Building, optimizing and testing machine learning models:
  1. Regression (linear, polynomial, ridge...)
  2. Classification (logistic regression, Random Forest, Support Vector Machines)
  3. Unsupervised learning (Clustering, PCA)
  4. Meta model tuning (K-fold cross validation, ADAboost)

DAY 4

+ Advanced 1 – Natural Language Processing

- Introduction to the possibilities of NLP
- Basic feature extraction using Sklearn (bag of words, TF-IDF,...)
- Advanced feature extraction using NLTK (stemming, lemmatization, N-grams,...)
- Creating predictive models using NLP

DAY 5

+ Advanced 2 – Neural networks and Deep learning

- Introduction to Neural networks
- Deep learning neural networks with Keras
- Introduction to Tensorflow
- Image Recognition with convolutional neural networks

Interested?

Does this course seem a good fit for your programmers? Request your offer now via our website or mail!

This course can also be given privately at your company. Feel free to reach out for more information.

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THE crunch ACADEMY

Data Science Course for Analysts

For the analysts:
Take your Data Analytics to a whole new level and make sure you continue growing.

What will you learn?

+ Python Essentials for Data Science
Basic data types, as well as using Numpy and pandas to wrangle data in Python. Perform state-of-the-art explanatory and predictive statistical analytics in Python. Construct your own machine learning and AI models in Python, tailored and tuned to your specific business setting.

+ Creation of Models Using Sklearn
Sklearn rightfully is one of the most popular packages to create data science models, after these sessions you will be sufficiently proficient to use this package.

+ Understanding of Data Science Concepts
Knowing what constitutes a predictive model, using different models for different challenges, knowing the lingo of a data scientist,... Obtain insights and intuitions in the inner mathematical methods behind these applications. Use these understandings to easily apply machine learning techniques in other programming languages. Build a solid theoretical foundation allowing you to master new developments and techniques in this fast-evolving field. Use your modeling techniques to successfully solve business intelligence questions.

+ Effective Communication
Learn how to communicate your results to your fellow co-workers, elevating the data insights across your company and be able to follow specialised media, blog posts and papers.

+ Necessary Tools for Advanced Courses
With your introduction to NLP & Neural Nets and your new-found programming experience, you are ready to go one step further and continue training in Natural Language Programming and Neural Networks. You will also have the required skills to enroll in our advanced courses.

About the course

Five full days of training, spread across five weeks will teach you everything you need to know to start creating your own data science models.

The workshops consist of presentations given by machine learning experts, these presentations are followed by **hands-on training** exercises using interactive browser-based notebooks (Jupyter, Python).

Unlike in the Machine Learning Academy, **you do not need programming experience.** This course includes a tutorial on programming and will help you through the technical side of Data Science at your own pace. If you want to continue learning after this course, you can join the advanced classes of Natural Language Processing and Deep Learning – Neural Networks (see page 7).

Practical Info

Dates Fall Session: fri 04/10, fri 11/10, fri 18/10, fri 25/10, fri 08/11

Where: Munt 6, 1000 Brussel, Belgium

Duration: 9:00 – 12:30 and 13:30 – 17:00

Language: English

Price: € 1.495 pp. excl. BTW

Good to know

+ **Breakfast & Lunch included**
+ **Bring your own device**

Full program of the Data Science Course for Analysts

THE crunch ACADEMY

DAY 1

+ Basic 1 – The world of data science

- Data science 101
- The core concepts of the data science world
- Moving from descriptive to diagnostic, predictive and finally prescriptive analytics

+ Basic 2 – Python programming principles

- Introduction to Object Oriented Programming
- Python Data Types
- Python Flow Control

DAY 2

+ Basic 3 – Python essentials for Data Science

- Matrix mathematics with Numpy
- Series & DataFrames with Pandas
- Data manipulation & wrangling

+ Basic 4 – Descriptive Analytics & Visualisation

- Summary techniques for data exploration
- Data communication tips & tricks
- Concise data visualisation and exploration using
- Python Seaborn & Matplotlib

DAY 3

+ Basic 5 – Predictive Analytics & Inductive Statistics

- Inductive/predictive statistical modeling
- Central Limit Theorem and estimation theory
- Hypothesis testing with Analysis of Variance
- Linear correlation analysis with linear regression Advanced linear regression with interaction

DAY 4

+ Basic 6 – Machine Learning with scikit-learn

- Basic concepts of machine learning and modeling
- Building, optimizing and testing machine learning models:
  1. Regression (linear, polynomial, ridge...)
  2. Classification (logistic regression, Random Forest, Support Vector Machines)
  3. Unsupervised learning (Clustering, PCA)
  4. Meta model tuning (K-fold cross validation, ADAboost)

DAY 5

+ Introduction to Deep Learning

- Introduction to Natural Language Processing
- Introduction Neural Networks
- Overview of different layer architectures

Interested?

Does this course seem a good fit for your analysts? Request your offer now via our website or mail!

This course can also be given privately at your company. Feel free to reach out for more information.

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Extra advanced classes after the Data Science Course

THE crunch ACADEMY

DAY 1

+ Advanced 1 – Neural networks and Deep learning

- Introduction to Neural networks
- Deep learning neural networks with Keras
- Introduction to Tensorflow
- Image Recognition with convolutional neural networks

DAY 2

+ Advanced 2 – Natural Language Processing

- Introduction to the possibilities of NLP
- Basic feature extraction using Sklearn (bag of words,
- TF-IDF,...)
- Advanced feature extraction using NLTK (stemming, lemmatization, N-grams,...)
- Creating predictive models using NLP

Practical info

Date Spring Session: fri 21/06
Where: Rodelijvekensstraat 28, 1000 Ghent

Date Fall Session: fri 06/12
Where: Munt 6, 1000 Brussels, Belgium

Duration: 9:00 – 12:30 and 13:30 – 17:00

Language: English

Price: € 295 pp. excl. BTW

Practical info

Date Spring Session: fri 28/06
Where: Rodelijvekensstraat 28, 1000 Ghent

Date Fall Session: fri 13/12
Where: Munt 6, 1000 Brussels, Belgium

Duration: 9:00 – 12:30 and 13:30 – 17:00

Language: English

Price: € 295 pp. excl. BTW

About the courses

Our in-house experts in NLP & Neural nets will guide you into the world of word embeddings, topic modeling, deep learning and convolutional neural nets. For both topics, you will start with an introduction of the core concepts, an overview of the current state-of-the-art techniques being developed and end with one big use case, which you will solve together.

To enroll in this course, you are required to have completed our Data Science for Analysts basic track. This ensures you have the required skills in Python Programming and Data Science basics to fully grasp the advanced content of this class.

Note that you are not required to sign up for both classes. You can safely sign up for just one.

Interested?

Does one of these courses seem a good fit for your analysts? Request your offer now via our website or mail!

Combination discount: If you wish to follow both advanced classes, we can offer you a **20% discount.**

These courses can also be given privately at your company. Feel free to reach out for more information.

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THE crunch ACADEMY

AI for Managers

For the managers:
Learn to spot new opportunities offered by data science, and know how to guide your team to tap into this potential.

Why should I take this training?

As a manager you have the responsibility to determine the direction in which your teams are headed. This training will ensure you have the information you need to spot new opportunities that leverage the possibilities of AI, and that you are sufficiently knowledgeable to steer your teams along the right path to ensure that these dreams become a reality.

What will you learn?

+ **Spot new opportunities**
  Identify the next step for your company and your teams.

+ **Communicate with technical teams and suppliers**
  Be able to communicate effectively with your technical teams, and understand their feedback. Thus enabling you to plan for succes.

+ **Communicate your plans to managers**
  Few great ideas have not met resistance early on, after this course you will be sufficiently knowledgeable to convince you peers and superiors of the value of this new and exciting ecosystem.

About the course

During **a full day workshop** a number of different teachers will open your eyes to the world of data science. All this takes place at the Co.Station in Ghent, the home turf of the Crunch team. Together with your peers you will go through an intensive training with both business and technical perspectives.

Interested?

Request your offer now via our website or mail!

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Practical Info

Dates: TBC
Duration: 9:00 – 12:30 and 13:30 – 17:00
Where: Oktrooiplein 1, 9000 Ghent, Belgium
Language: English
Price: € 795 pp. excl. BTW

Good to know

+ **Breakfast & Lunch included**
+ **Bring your own device**

Full program of AI for Managers

DAY 1

+ Introduction to the world of Artificial Intelligence (AI)

- Inspirational examples and the increasing importance of AI
- The evolution of AI: past, present and future
- Core concepts of AI: machine learning, deep learning, natural language processing, ...
- Impact of AI on businesses: How much business value can AI create?
- The moment is now: Why now, and why you?

+ AI in business today: Some practical examples

- Selection of practical use-cases
- Build or buy: key decision drivers
- AI maturity models & preconditions for success

+ Data + X: Which ingredients do you need?

- Which data do you have? Where? Who can access it? What is missing? How to fill the blanks?
- Do you have the right skills and tools? Which are missing?

+ Project selection: What defines a good AI project?

- Key criteria for successfully selecting AI projects and how to assess them
- Group exercise: building a project longlist and narrowing it down to a shortlist based on key criteria

+ AI project management: A roadmap to success

- Comparison with general project management
- Project lifecycle and timelines
- Project delivery
- Staffing: Which profiles do you need?
- Pricing: What is the estimated cost of an AI project when working with external providers?
- How to measure performance?
- Operations and maintance

+ The data-driven venture: What does it take to industrialize AI?

- What is a data-driven venture?
- How to lead the transformation towards a data-driven venture?
- Common pitfalls on the way to success
- Different operational models for data-driven ventures

Interested?

Does this course seem a good fit for your managers?
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