EPSILON - European Platform for Data Science: Incubation, Learning, Operations and Network

Training Material for Teaching and Self-Learning

Structure of the Learning Material

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Hochschule Harz
Harz University of Applied Sciences

EPSILON

Funded by the European Union

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The Objective of the Teaching & Training

The transnational project EPSILON with partners from Germany, Portugal, Cyprus and Lithuania addresses the needs of European Data for Good initiatives and higher education institutions with degrees in Data Science.

As a first step, the project team designed tailored workflows and tools for European Data for Good initiatives. Based on this, EPSILON set up an European Knowledge Platform and establish a new Data for Good initiative in Lithuania. The gained experience and knowledge was transformed into target group specific learning material for students, university teachers and Data Science enthusiasts.

Who created the Teaching & Training Material

Hochschule Harz
Harz University of Applied Sciences

The Harz University of Applied Sciences, founded in 1991, is a small University of Applied Sciences in the center of Germany and has two locations. The Department of Automation and Computer Science as well as the Department of Economics are located in Wernigerode, while the Department of Administrative Science is located in Halberstadt. Harz University of Applied Sciences was responsible for developing and creating the training materials. The project results of the following institutions were incorporated into the creation of the materials:

VILNIAUS UNIVERSITETAS 1579 UNIVERSITAS VILNENSIS
Kaunas Faculty

The Vilnius University in Vilnius is the largest university in Lithuania and one of the oldest in Central Europe. It consists of twelve faculties, eight university institutes and ten study and research centres. The Kaunas Faculty is home to the Institutes of Social Sciences and Applied Computer Science as well as Languages, Literature and Translation Studies.

Who created the Teaching & Training Material

The Nova School of Business and Economics (Nova SBE) of the Universidade Nova de Lisboa is the leading business school in Portugal, foundet in 1978. The university is accredited with the so-called Triple Crown (university accreditation) and is therefore among the top 1% of business schools worldwide. In addition, it is the only university in Portugal to offer the globally recognised CEMS Master in Management, which is ranked 13th in the world according to the Financial Times ranking.

The University of Cyprus is a university in Nicosia and the most important higher education institution in the Republic of Cyprus. It was founded in 1989. The university currently has six faculties (Humanities, Applied Sciences, Social and Educational Sciences, Economics, Engineering and Literature) and teaches around 3,500 students in Greek and Turkish.

How to use the Material

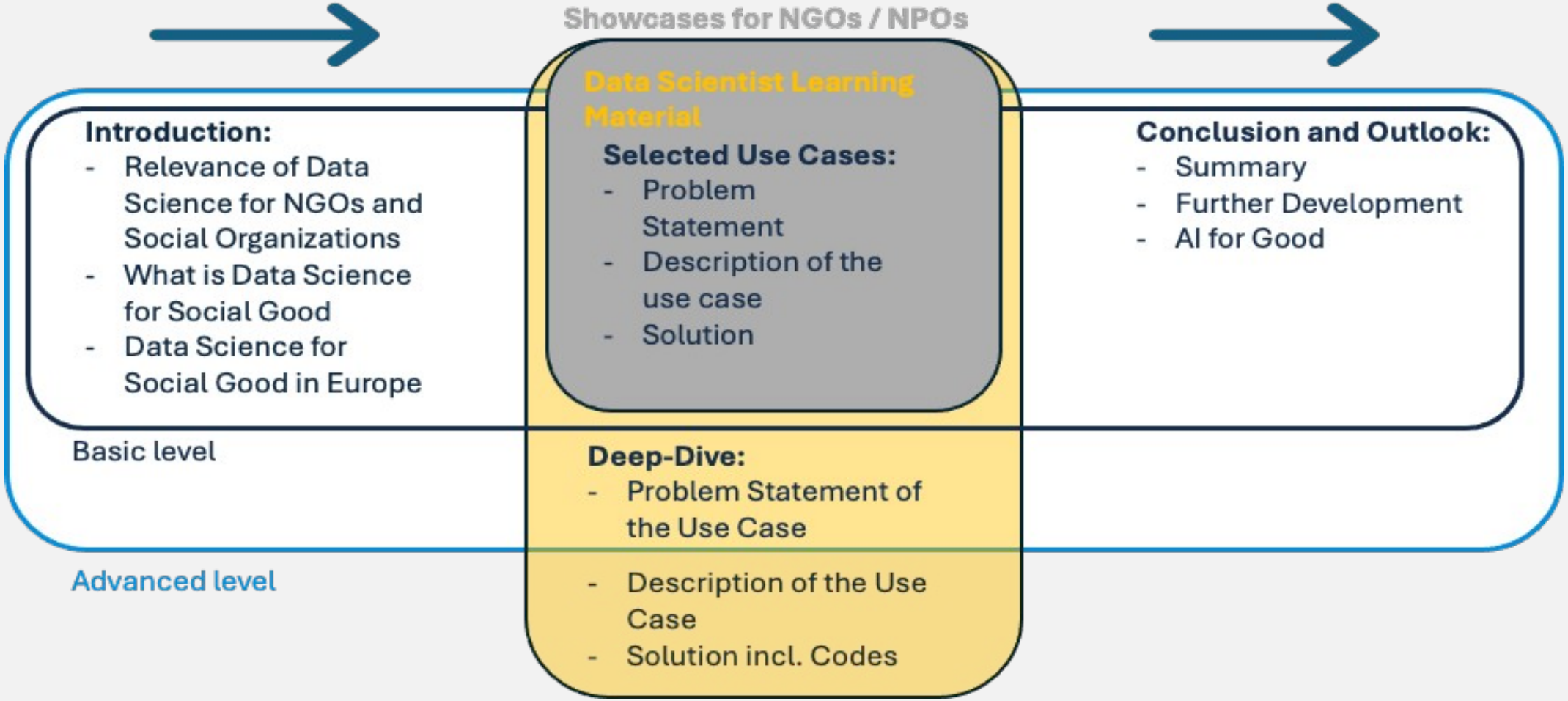
As part of the project, knowledge was generated from various sources (interviews, benchmarking, literature research, etc.), structured and prepared for the target group. The result is 6 modules that deal with different topics in the context of Data Science for Good and are suitable for both, self-studying and teaching.

How to use the Material

To tailor the material to the needs of the learners it is divided into beginner and advanced levels of knowledge. This ensures that different target groups are able to use the learning material. The target groups are: students, NGOs, volunteers and data experts.

The chart on the next slide illustrates what is relevant for each target group. It also outlines which topics are discussed under each heading.

How to use the Material



Description of the modules

1. Introduction to Data Science

This module serves as an introduction to the topic and deals with basic concepts and functions in the field of data science. The contents are presented as follows:

- Elements of Data Science
- Big Data
- Data Processing
- Ethical Issues

Description of the modules

2. Data Science for Good

This module provides a deep dive into the topic of social good and the possibilities of support through data science. The contents are presented as follows:

- Social Good
- Data for Good
- Data Science for Social Good (DSSG)
- Who does Data Science for Social Good?

Description of the modules

3. A Comparative Analysis of Data for Good Initiatives

In order to approach the term ‘Data Science for Social Good’ (DSSG) scientifically, a benchmark study was carried out by the *NOVA School of Business & Economics in Portugal.* The contents are presented as follows:

- The „Data for Good“ Landscape
- Organizations and Initiatives
- Key Indicators
- Main Findings

Description of the modules

3. Selected Use Cases

This module is divided into Beginner and Advanced Level.

While beginners can familiarise themselves with the content and procedure of the projects, there is a detailed description of the corresponding programming codes for the advanced level.

Description of the modules

4. Selected Use Cases

The contents are presented as follows:

- Project 1: Where to build new bicycle parking spots in Paris?
- Project 2: Predicting Long-Term Unemployment in Portugal
- Project 3: COVID-19 mortality surveillance platform
- Project 4: Domestic Violence Data Observatory
- Project 5: AI for Good

Description of the modules

5. Best Practices

The contents are presented as follows:

- What qualifies as a Data for Good project?
- Requirements for a successful project
- Data Maturity of an organization
- Finding Project Partners
- Characteristics of a typical Data for Good Project Team

Description of the modules

5. Best Practices

- Project Scoping
- The typical Data for Good project lifecycle
- Best Practices for running a project
- Ethical and Legal concerns
- Typical Output
- Typical Organizational Structure
- Necessity of a legal entity

Description of the modules

6. Conclusion and Summary

This module concludes with a review of the key points of the previous training material and provides impetus for the future and sustainability.

Open Educational Resources

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