

Training: Compendium CE
 Developing Bots. A Primer


FORM OF TRAINING	MATERIALS	PRICE	DURATION
Traditional	Hardcopy	400 EUR	2 days
Traditional	CTAB Tablet	550 EUR	2 days
Distance learning	Hardcopy	400 EUR	2 days
Distance learning	CTAB Tablet	400 EUR	2 days

LOCATIONS

Krakow - 5 Tatarska Street, II floor, hours: 9:00 am - 4:00 pm
 Warsaw - 17 Bielska Street, hours: 9:00 am - 4:00 pm

TRAINING GOALS:

During the workshop, we implement three different types of bots. We have prepared a few notebooks to be done before the course to the participants a short introduction into chatbots. We implement an HR assistant bot that can be a basis for your projects. We show how to develop Slack, Telegram and Messenger bots. At the beginning of day on one of the courses we present bot taxonomy and machine learning terms related to bots. Next, we go through natural language processing and natural language understanding. Between both, a short introduction to tensorflow is given. It is needed for better understanding of how natural language understanding methods work. During day two we go into more complex topics like sentiment analysis, context management and how to build intelligent bots. We show how to develop a vectorizer and build a sentiment analysis method. This method is next compared with other solutions that are available on the market. The context management is a complex topic and we show how to use some methods to deal with context recognition and management in case we have more than one. The last part is dedicated to generative models and how to build intelligent bots. The course ends with a homework where the methods explained during the course should be used by the participants in given homework examples. Additionally, there is one optional notebook for speech recognition.

Outcomes

Participants will understand...

- how to use NLP methods,
- how machine learning methods are used for bots,
- generative and relative approaches to NLU,
- how to use sentiment analysis.

Participants will be able to...

- develop their own bot using common tools like NLTK, spaCy, Cortana and Alexa,
- build machine learning models using common solutions in Python.

CONSPECT:

- Introduction to bots
 - Bot taxonomy
 - List of known bots and bot platforms
 - Usage examples
- Machine learning and bots
 - Short explanation of NLP/NLU and machine learning usage for bots
 - Three generations of bots explanation
- Natural Language Processing
 - Regular expressions and Python methods used for text processing
 - Corporas, NLTK and tokenization
 - Part of Speech and Tagging - examples with NLTK and Spacy
 - Text normalization
 - Lemmatization
 - Sentence extraction
 - Noun chunks
 - Named Entity Resolution
 - TFIDF and bag of words
- Short introduction to Tensorflow
 - Tensorflow elements explanation
 - Build a linear regression model
 - Build a random forest classifier
 - Different types of neural network architectures
 - Build a recurrent neural network
- Natural Language Understanding
 - Similarity measures
 - Vector Space Model explained
 - Type of vectorizers
 - Build a vectorizer with Tensorflow
 - Intent and entities in NLU explained
 - Using SpaCy language model and Rasa for intent understanding
- Sentiment Analysis

- Introduction into sentiment analysis
- CoreNLP and TextRazor used for sentiment analysis
- Implement a PCA Tfidf vectorizer for sentiment analysis
- Build a simple sentiment analysis model
- Context management
 - Introduction to the problem of context management
 - Use similarity measure to get the context of the conversation
 - Intents in context management
 - Implementation of a neural network for context recognition
 - Updating a model in tensorflow for continuous context learning
- Intelligent bots
 - Different approaches to text generation
 - Text generation with a simple recurrent neural network
 - Introduction to generative models
 - Build a VGAN for answer generation

REQUIREMENTS:

- Basic Python knowledge,
- Recommended: basic machine learning Knowledge

Difficulty level



CERTIFICATE:

The participants will obtain certificates signed by Compendium

TRAINER:

Certified Compendium CE Trainer.