

Advanced Python	<p>Learning to write decorators, covering</p> <ul style="list-style-type: none"> • closures • how to work with functions as first-class arguments • variable arguments • argument unpacking, even • some details of how Python loads its source code. 	First Day
	Demystifying iterators, iterables and generators	
	<p>Exercises:</p> <p>Writing a simple profiling decorator, useful generators</p>	
	<p>Replacing Matlab with Python:</p> <ul style="list-style-type: none"> • Numpy • Matplotlib • Scipy • Pandas 	
	<p>Exercises:</p> <p>Reading and writing csv files</p> <p>Plotting Data</p> <p>Manipulation of DataFrames in Pandas</p>	
Machine Learning	Object Oriented Programming	Second Day
	Exercise	
	<p>Machine Learning:</p> <ul style="list-style-type: none"> • Basic Machine Learning with Python: Python algorithms implementing basic Neural Networks, k-Nearest-Neighbor, Naive-Bayes • Using Scikit • Basic Introduction into TensorFlow 	
	<p>Exercises:</p> <p>Programming a Naive Bayes Classifier</p> <p>Writing a Neural Network</p>	

Prerequisites:

- Basic Python skills:
Data Types: lists, tuples, dictionaries
Conditions and Loops
- Advanced programming experience in another programming language like Java, C++, C or Matlab