**Python & Machine Learning**

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This course is designed for high-school students to gain and hone the skills of coding in python and learn the basics of engineering artificial neural networks.

Intended learning outcomes:

By the end of the course the students will be able to:

* comprehend and compose basic programs in python
* perform elements of data processing
* select a suitable type of network for the problem at hand
* engineer and train available and custom-built neural nets

12 Sessions

**Fundamentals of python language**

1. Simple inputs and operations

2. Functions, branches & loops

3. Objects and classes

4. Data processing

**Elements of neural networks**

5. Deep Learning: capabilities and limitations

6. Anatomy of neural nets

7. Digit classifier

8. Image recognition

9. Natural language processing

10. Recurrent nets

11. Generative models

12. Advanced AI models - GANs

References:

Dane Hillard, 'Practices of the Python Pro', Manning Publications, 2020.

Sylvain Gugger and Jeremy HowardDeep, "Learning for Coders with fastai and PyTorch: AI Applications Without a PhD", 2020.