



## Fundamentals of Artificial Intelligence-E2(2)

and study how to implement them using the deep learning framework Chainer.

### 5. Computer Vision and Natural Language Processing (4 weeks)

We will first give a brief introduction to computer vision: what is an image for a computer, and what are convolution layers? Then, we will study how to build an object recognition neural network with convolution layers, max-pooling layers, and fully-connected layers. Next, we will implement and train a real object recognition neural network in Chainer. Finally, we will have a quick look at recurrent architectures and how they are used to process text. As a final application, students will be asked to solve a real problem in their studies using the models (either basic supervised machine learning or deep learning) introduced in this course.

### 10. Feedback (1 week)

#### 【履修要件】

特になし

#### 【成績評価の方法・観点】

Evaluation is based on class participation (15%), mini-reports and exercises (60%), and the final report of solving a real problem in students' studies using the models learned in this course (25%).

#### 【教科書】

Lecture handouts will be provided in the class.

#### 【参考書等】

( 参考書 )

Ian Goodfellow, Yoshua Bengio and Aaron Courville 『Deep Learning』 ( The MIT Press ) ISBN:978-0262035613 ( 2016 )

#### 【授業外学修（予習・復習）等】

The instructor expects students to spend over 60 minutes after each class reviewing the content. Some practical exercises will also be given at the end of some lectures so as to let the students see how much of the content they do understand practically.

#### 【その他（オフィスアワー等）】

No office hours are specified. However, questions and requests are welcome by email.