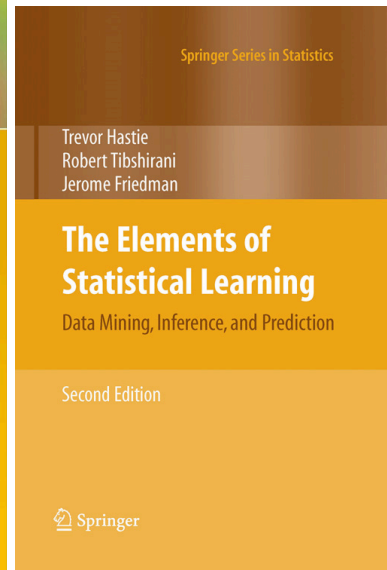
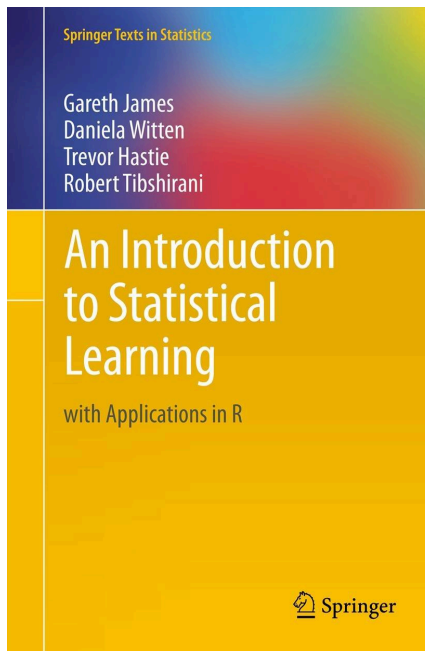


!

11!"1An Introduction to Statistical Learning with Applications in python (ISLR-python)

Gareth James, Daniela Witten, Trevor Hastie and Robert Tibshirani



1. [An Introduction to Statistical Learning \(statlearning.com\)](http://statlearning.com)
2. <https://github.com/JWarmenhoven/ISLR-python>
3. [ISLR-python.zip notebook](#)
4. <https://www.dataschool.io/15-hours-of-expert-machine-learning-videos/>

As the scale and scope of data collection continue to increase across virtually all fields, statistical learning has become a critical toolkit for anyone who wishes to understand data. An Introduction to Statistical Learning provides a broad and less technical treatment of key topics in statistical learning. Each chapter includes python labs. This course is appropriate for anyone who wishes to use contemporary tools for data analysis.

In this course, introduction to Artificial Neural Networks, Recurrent Neural Network, LSTM Models for Time Series Forecasting, Visual Recognition with Deep Learning, VGG Convolutional Neural Networks, Object Detection, Instance Segmentation, FaceNet: A Unified Embedding for Face Recognition and Clustering, Sparse methods for Classification and Regression, Decision Trees, Boosting, Support Vector Machines, Clustering, ...



[Attendance Check](#)

<https://open.kakao.com/o/gAzIYvKg>

[Self Introduction and Current Research Topics Registration](#) @ Sep 30th, 2024

[9.02]  DL01_ANN

Introduction to Artificial Neural Network

<http://elektronn.org/downloads/Intro-ANN.pdf>

[Mathematical Neural Networks by Julia García Cabello, Axioms 2022](#)

[9.09]  DL01_ANN

Introduction to Artificial Neural Network

<http://192.168.111.111/>  Workstation Guide Soekamto Yosua Setyawan

[9.16] Chuseok 추석연휴 - National Holiday

[9.23]  DL01_ANN_KS_FNN

Prediction of Significant Wave Height in Korea Strait

 DL02_RNN_KS_LSTM

How to Develop LSTM Models for Time Series Forecasting

eecs498/WI2022/598_WI2022_lecture16.pdf

[9.30]  DL03_ImageClassification Visual Recognition with Deep Lea

rning

→ [Self Introduction and Current Research Topics Registration](#) ←

[Natadjaja Hans Richard Alim](#), [Andreas Lim](#), [Kim Aleksandr](#),
[Samuel David Vincent](#), [NIRINGIYE GODFREY](#), [Melisa Krisnawati](#)

[10.7]  DL03_VGG_CNN VGG Convolutional Neural Networks

 DL04_ObjectDetection Object Detection with Deep Learning

 MediaPipe [MediaPipe.zip](#) ML solutions for live and streaming media

[10.14] https://www.idpoisson.fr/galerie/m2_reseaux_neurones/

https://github.com/bgalerie/M2MAS_neural_networks/

[1. introduction to neural networks- multiclass logistic classification](#)

[2. introduction to neural networks - backpropagation](#)

[3. deep neural networks](#)

[4. deep learning recipes](#)

<https://sanchom.wordpress.com/2011/09/01/precision-recall/>

 Multi-person Real-time Action Recognition Based-on Human Skeleton

 DL05_InstanceSegmentation Instance Segmentation with Deep Learning

 DL06_FaceNet FaceNet: A Unified Embedding for Face Recognition and Clustering

 _RL2025 Deep Reinforcement Learning

→ [HW1 Registration](#) ←

Natadjaja Hans Richard Alim, Samuel David Vincent,
NIRINGIYE GODFREY, Andreas Lim, Melisa Krisnawati

[10.21] **Middle Term Exam**

Natadaja Hans Richard Alim, Samuel David Vincent, Aleksandr Kim
Niringiye Godfrey, Andreas Lim, Melisa Krisnawati, 최윤석, Kanak Trivedi

[10.28] [Chap 1. Introduction](#)

[Chap 2. Statistical Learning](#)

2.1. What is Statistical Learning?

2.2. Assessing model accuracy

[ISLR-python.zip notebook](#) ←

<http://www.rnfc.org/courses/isl/Lesson%202/Summary/> ***

<https://actruce.com/en/islr-chapter-02-what-is-statistical-learning/>

<https://www.geometrictools.com/Documentation/ThinPlateSplines.pdf>

```
from google.colab import drive
drive.mount('/content/drive')
myPath = '/content/drive/MyDrive/myPath/notebook/data'
```

→ [Topics in Deep Learning - Final Presentation\(> 10 mins\)](#) ← at Dec. 9
decide on a deep learning-related research topic and prepare for the presentation.

[11.4] [Chap 3. Linear Regression](#)

[Chapter 2.ipynb](#) [Chapter 3.ipynb](#)

 SL03_LinearReg_bglee.pptx : t statistic and p-value

<http://www.rnfc.org/courses/isl/Lesson%203/Summary/> ***

[Simple Linear Regression](#) ***

<https://mdporter.github.io/ST597/lectures/16-regression.pdf> ***

<https://seaborn.pydata.org/index.html>

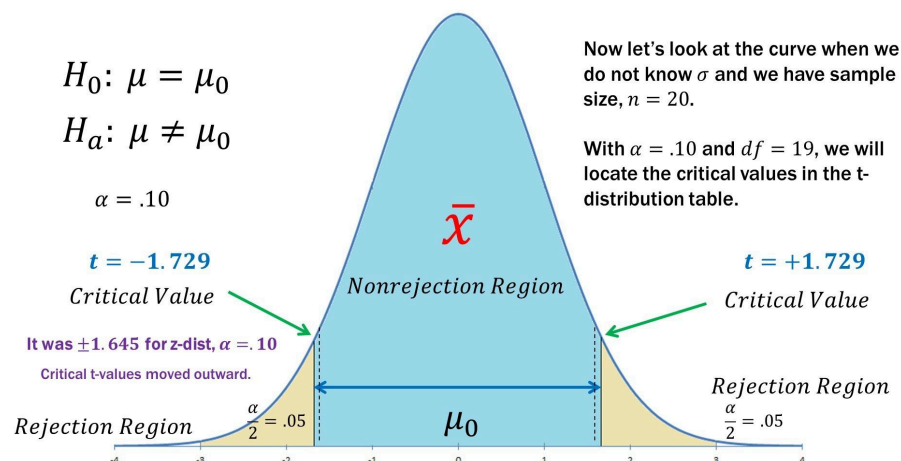
<https://scikit-learn.org/stable/>

<https://www.statsmodels.org/stable/index.html>

<https://www.statsmodels.org/stable/examples/notebooks/generated/ols.html>

https://ntaback.github.io/UofT_STA130/week9/sta130_lecture9_2.pdf

The Two-tailed t-Test Rejection Region, $n = 20$



```
# Quadratic fit as_matrix() --> to_numpy()
X2 = auto[['horsepower', 'horsepower2']].to_numpy()
```

가설검정 이해 <https://kkokkilkon.tistory.com/36>
 p-value t-statistic test static and t-value t-value & p-value
 ANOVA F-test Linear Regression ISL-linear-regression
<http://bensknowledge.blogspot.com/2015/06/blog-post.html>

KNN Regression

[k_nearest_neighbors_reg](#) [k-nearest-neighbor-introduction-regression-python](#)

KNN Classifier <https://gomguard.tistory.com/51>

Iris Data Set <https://pinkwink.kr/1128>

[11.11] [Chap 4. Classification Methods \(SL04_Classification.pdf\)](#)

<https://www.desmos.com/calculator/fi4f9uft51>

<http://www.rnfc.org/courses/isl/Lesson%204/Summary/> ***

https://godongyoung.github.io/.../ISL-Classification_ch4.html

<https://yintingchou.com/posts/2017-03-13-lda-and-qda/>

http://www.sci.utah.edu/~shireen/pdfs/tutorials/Elhabian_LDA09.pdf ***

<https://todayisbetterthanyesterday.tistory.com/25> ***

https://en.wikipedia.org/wiki/Linear_discriminant_analysis ***

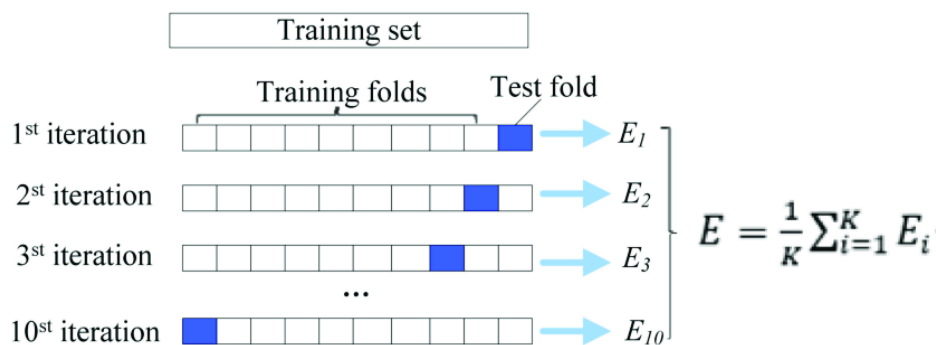
https://en.wikipedia.org/wiki/Box_plot

<https://www.simplypsychology.org/boxplots.html>

[Chap 5. Resampling Methods \(SL05_Resampling.pdf\)](#)

<http://www.rnfc.org/courses/isl/Lesson%205/Summary/> ***

[k-fold Cross Validation Method](#)



[Chap 6. Linear Model Selection and Regularization \(SL06_Regularization.pdf\)](#)

<http://www.rnfc.org/courses/isl/Lesson%206/Summary/> ***

[Ridge regression, Lasso regression](#)

https://modulabs-biomedical.github.io/Bias_vs_Variance

[A Complete Tutorial on Ridge and Lasso Regression in Python](#)

[11.18] [Chap 7. Support Vector Machine \(SL07_SVM_JaepilKo ***\)](#)

<http://www.rnfc.org/courses/isl/Lesson%209/Summary/>

 SL08_DTRF_bglee.pptx ***

[SL08_DecisionTrees](#) [SL08_RandomForests](#) [SL10_Clustering](#)

[11.25]  SL09_Boosting_bglee.pptx ***

[12.02]  ChatGPT_GenAI_1

[12.09] [Topics in Deep Learning - Final Presentation\(> 10 mins\)](#) @ Dec.
decide on a deep learning-related research topic and prepare for the presentation.

 Statistical Learning-Presentation (Deep Learning topic) Vincent Samuel David

 SL Final Presentation Natadjaja Hans Richard Alim

 Final Presentation Andreas Lim

 RAG-presentation.pptx Kim Aleksandr

 SL Final Presentation

[Godfrey CNN Model for IDS.pptx](#) NIRINGIYE GODFREY

 Cancer Risk Factor.pptx Melisa Krisnawati

[12.16] **Final Term Exam**

Python

<http://www.cs.fsu.edu/~carnahan/cis4930sp17/index.html>

[Full Python Tutorial](#)

[An introduction to Python with Numpy, Scipy, and Matplotlib](#)

[Object Oriented Design with Python, Classes, Objects and Class](#)

Anaconda

<https://www.anaconda.com/products/individual>

conda update conda

conda create -n sl2023 python=3.8 anaconda

conda activate sl2023

pip install matplotlib

pip install ipywidgets

jupyter nbextension enable --py widgetsnbextension

pip list

conda deactivate

conda env list

conda remove -n yourenvname --all

pip install --upgrade pip

pip install tensorflow==2.5.0 #python=3.8

pip install --upgrade tensorflow

pip install opencv-python

pip install pygame



```
pip install pillow
pip install mediapipe
pip install PyOpenGL
pip install PyOpenGL_accelerate
pip install -r requirements.txt
```

<https://stackoverflow.com/questions/47396512/jupyter-widget-does-not-appear-in-notebook>

<https://webnautes.tistory.com/1395>

<https://teddylee777.github.io/colab/tensorflow-gpu-install-windows>

Visual Studio Code

<https://code.visualstudio.com/>

<https://code.visualstudio.com/#hundreds-of-extensions>

<https://code.visualstudio.com/docs/python/environments>

Windows Subsystem for Linux

<https://docs.microsoft.com/en-us/windows/wsl/install-win10>

<https://wnsgml972.github.io/setting/2019/05/07/wsl/>

[how-to-install-anaconda-on-ubuntu-18-04-quickstart](https://wnsgml972.github.io/setting/2019/05/07/wsl/how-to-install-anaconda-on-ubuntu-18-04-quickstart)

Access Linux Files in File Explorer

[how-to-access-your-linux-wsl-files-in-windows-10](https://www.youtube.com/watch?v=K8vXqK8vXqK)

explorer.exe .

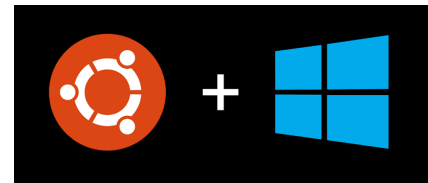
\\wsl\$

[Important note for JupyterHub \(DSU\)](#)

https://www.csd.uwo.ca/~oveksler/Courses/CS434a_541a/Lecture8.pdf

<http://www.stat.columbia.edu/~madigan/DM08/linearClassification.ppt.pdf>

<https://sthalles.github.io/fisher-linear-discriminant/>



DL01_ANN

one-hot encoding, epoch/batch/iteration, bias/variance tradeoff