Simple template

Wooyoung Shin

Dept. of Statistics, KU

December 24, 2019

Contents

Install tex and texstudio

- First, visit latex install cite(https://www.latex-project.org/get/).
- If the download is complete, install texstudio (https://www.texstudio.org/).

Include graphics

- Notice that your image file **must be** with the .tex file you want to compile.
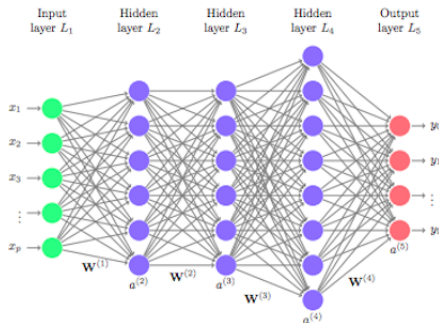

Figure: Deep learning structure

- It's even better if you put a caption on it. Figure 1 shows a deep learning structure.

Make tables

- You can draw a table easily by referring to the following address. (https://www.tablesgenerator.com/)

Table: Averages and standard errors (in parentheses) of RMSE and MAE values (all values multiplied by 10^3) based on 100 samples for SVQR and QSS

Indices	Case 1		Case 2	
	SVQR	QSS	SVQR	QSS
$\tau = 0.1$				
RMSE	249.3 (1.13)	299.3 (1.34)	231.6 (1.30)	310.1 (0.93)
MAE	157 (0.88)	170.8 (0.93)	128.6 (0.71)	155.7 (0.72)
$\tau = 0.5$				

Make equations

- Assume $\sum(X_{i,n} - \bar{X})/(\sum(X_{i,n} - \bar{X})^2) := w_{i,n}$ and $Z_{i,n} \overset{ind}{\sim} N(0, \sigma_i^2)$.
- Then by Lindeberg's condition,

$$\frac{1}{\sum_{i=1}^n \sigma_i^2} \sum_{i=1}^n E\left[w_{i,n}^2 Z_{i,n}^2 I\left(|w_{i,n}Z_{i,n}| > \epsilon \sqrt{\sum_{i=1}^n \sigma_i^2} \right) \right] \qquad (1)$$

$$\leq \frac{1}{\sum_{i=1}^n \sigma_i^2} \max_{1 \leq i \leq n} w_{i,n}^2 \max_{1 \leq i \leq n} E(Z_{i,n}^2) \to 0 \qquad (2)$$

- Also $E(\hat{\beta}_x) = \beta_x$ and $V(Y_{i,n}) = \sigma^2$.
- Thus, the least square slope estimator($\hat{\beta}_x$) is asymptotically normal.
- And (iii), (iv) do not converge asymptotically normal by below.

Referencing article

- First visit google scholar cite(https://scholar.google.com/)
- Then click the "" icon.

Figure: Google scholar page 1.

- Click the Bibtex file

Figure: Google scholar page 2.

Referencing article

- Next, scrape the lines

- And make .bib file to your references.
- Notice that your .bib file **must be** with the .tex file you want to compile.

Referencing article

- It is able to solve massive data set problems for using many hidden units in a layer, multiple hidden layers, weight sharing, a variety of colorful forms, and innovative learning algorithms such as Adam([Kingma and Ba(2014)]).

Reference

L. Buitinck, G. Louppe, M. Blondel, F. Pedregosa, A. Mueller, O. Grisel, V. Niculae, P. Prettenhofer, A. Gramfort, J. Grobler, R. Layton, J. VanderPlas, A. Joly, B. Holt, and G. Varoquaux. API design for machine learning software: experiences from the scikit-learn project. In *ECML PKDD Workshop: Languages for Data Mining and Machine Learning*, pages 108–122, 2013.

D. P. Kingma and J. Ba. Adam: A method for stochastic optimization. *arXiv preprint arXiv:1412.6980*, 2014.