THESIS TITLE

by

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THESIS TITLE

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ACKNOWLEDGEMENTS

Acknowledgements come here...

ABSTRACT

THESIS TITLE

One page abstract will come here.

ÖZET

TEZ BAŞLIĞI

Bir sayfa uzunluğunda özet gelecektir.

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LIST OF SYMBOLS

a_{ij}	Description of a_{ij}
$\mathbf{A}$	State transition matrix of a hidden Markov model
α	Blending parameter *or* scale
$\beta_t(i)$	Backward variable
Θ	Parameter set

LIST OF ACRONYMS/ABBREVIATIONS

2D	Two Dimensional
3D	Three Dimensional
AAM	Active Appearance Model
ASM	Active Shape Model

1. INTRODUCTION

Start with an introduction...

2. EXPERIMENTS AND RESULTS

Experiments and results come here...

2.1. Sample Section

Always place some text after headings before putting a graphics into a section as seen in Figure 2.1.

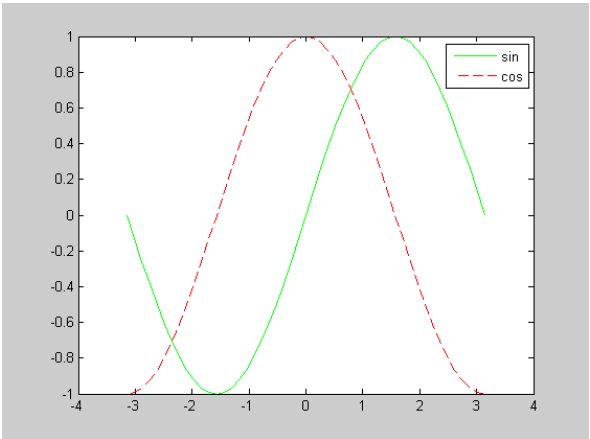

Figure 2.1. Sin and Cosine.

Now, let us cite some studies: one source as [1], two sources as [1, 2] or you may cite three or more sources as [1–3]. Observe that they are ordered in the references chapter in the same order as they are cited. Let us put a sample table as seen in Table 2.1. Please pay attention that the caption is followed by a period.

Footnotes should be avoided as possible. If there is an absolute necessity, footnotes should be used as this.[1]

Item lists may be represented as follows:

[1]Example of a footnote

Table 2.1. Sample table.

	Header 1	**Header 2**
Row 1	Bla bla bla	Bla bla bla
Row 2	Bla bla bla	Bla bla bla

- This is an item. Do not use boldface for the items.
  (i) This is a sub-item. Subsub-items are not allowed.
- Another item.

Item lists may also be represented as follows:

(i) This is another enumerated item.
  - This is another sub-item.

Theorem 2.1. *The solutions of the equation* $ax^2 + bx + c = 0$ *with* $a \neq 0$ *are*

$$x = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$$

Proof. We use the method of completing the square to rewrite $ax^2 + bx + c$.

$$\begin{aligned} ax^2 + bx + c &= a\left(x^2 + \frac{b}{a}x + \right) + c \\ &= a\left(x^2 + \frac{b}{a}x + \left(\frac{b}{2a}\right)^2 - \left(\frac{b}{2a}\right)^2 + \right) + c \\ &= a\left(x + \frac{b}{2a}\right)^2 - a\left(\frac{b}{2a}\right)^2 + c \\ &= a\left(x + \frac{b}{2a}\right)^2 - \frac{b^2 - 4ac}{4a}. \end{aligned}$$

Therefore $ax^2 + bx + c = 0$ can be rewritten as

$$a\left(x + \frac{b}{2a}\right)^2 - \frac{b^2 - 4ac}{4a} = 0,$$

which can in turn be rearranged as

$$\left(x + \frac{b}{2a}\right)^2 = \frac{b^2 - 4ac}{4a^2}.$$

Taking square roots gives

$$x + \frac{b}{2a} = \frac{\pm\sqrt{b^2 - 4ac}}{2a}$$

which implies

$$x = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$$

as required. □

Finally, we will put a sample algorithm (PCA algorithm) using the relevant package in a figure as shown in Figure 2.1 and sample equations.

$$\bar{\mathbf{s}} = \frac{1}{N}\sum_{i=1}^{N}\mathbf{s}_i \tag{2.1}$$

$$\mathbf{Q} = \begin{bmatrix} \mathbf{s}_1 - \bar{\mathbf{s}} & \mathbf{s}_2 - \bar{\mathbf{s}} & \cdots & \mathbf{s}_N - \bar{\mathbf{s}} \end{bmatrix}_{2L\times N} \tag{2.2}$$

$$\mathbf{C}_s = \frac{1}{N}\mathbf{Q}^T\mathbf{Q} \tag{2.3}$$

$$\mathbf{C}_s\mathbf{e}_k = \lambda_k\mathbf{e}_k \tag{2.4}$$

Require $\mathbf{s_i}$, $i = 1, 2, \ldots, N$ are normalized

Compute the mean $\bar{\mathbf{s}}$ using Eq. 2.1;

Form the $N \times 2L$ matrix $\mathbf{Q}$ as defined in Eq. 2.2;

if $N < 2 \times L$ **then**

  $\mathbf{Q} \Leftarrow \mathbf{Q}^T$;

end if

Compute the covariance matrix $\mathbf{C}_s$ using Eq. 2.3;

Decompose $\mathbf{C}_s$ to its eigenvectors $\mathbf{e}_k$ and eigenvalues λ_k satisfying Eq. 2.4;

if $N < 2 \times L$ **then**

  for $k = 1$ to K **do**

    $\mathbf{e}_k \Leftarrow \mathbf{Q}\mathbf{e}_k$;

    $\mathbf{e}_k \Leftarrow \mathbf{e}_k / ||\mathbf{e}_k||$ (normalization);

  end for

end if

Figure 2.2. Principal Component Analysis Algorithm.

2.1.1. Example of First Subheadings

Some text here

2.1.1.1. Example of Second Subheadings. Some text here too.

3. CONCLUSION

The conclusions of the thesis should come here.

APPENDIX A: APPLICATION

The appendices start here.

REFERENCES

1. Doebelin, E. O., *Control System Principles and Design*, John Wiley & Sons, Inc., New York, NY, USA, 1985.

2. Schneider, J., *The Extrasolar Planets Encyclopaedia*, 2010, `http://exoplanet.eu/catalog.php`, May 2011.

3. Aran, O., I. Ari, A. Guvensan, H. Haberdar, Z. Kurt, I. Turkmen, A. Uyar and L. Akarun, "A Database of Non-Manual Signs in Turkish Sign Language", *Signal Processing and Communications Applications, 2007. SIU 2007. IEEE 15th*, pp. 1–4, 2007.

4. Liu, W., *Development of Finite Element Procedures for Fluid-Structure Interaction*, Ph.D. Thesis, California Institute of Technology, 1981.

5. Hoogendoorn, M., J. Treur and P. Yolum, "A Labeled Graph Approach to Analyze Organizational Performance", *Proceedings of the 2006 IEEE/WIC/ACM International Conference on Intelligent Agent Technology*, 2006.