

# Hexapod Robot

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**Abstract**—This document is to be used as a template model for your design project report. Included in the .tex file are comments and instructions on how the document is constructed. Please check the L<sup>A</sup>T<sub>E</sub>X documentation available online for additional information. For your design report, the abstract should contain a concise summary of the document.

**Index Terms**—Template, Project Paper, Mechatronics

## I. INTRODUCTION

This document serves as a template and contains instructions for the design project. Please observe the page limits. Your introduction should provide the reader with any required background information. This section is used to prepare the audience with the questions you are going to answer.

The IEEEtran class file is used to format your paper and style the text. All margins, column widths, line spaces, and text fonts are already generated for you; please do not alter them. You may note peculiarities. For example, the head margin measures proportionately more than is customary. This measurement and others are deliberate, using specifications that anticipate your paper as one part of the entire proceedings, and not as an independent document. Please do not revise any of the current designations.

## II. DESIGN SPECIFICATION

### A. Problem Description

You should have a smooth transition between your Introduction and this section. In this section you should identify the problem you are trying to solve. You should also research the current state of the art: explore if people have already solved the problem, and their respective solutions. The following is an example of how to implement a numbered list:

- 1) Students are not yet informed on how to make a professional IEEE conference paper.
- 2) Students are unfamiliar with L<sup>A</sup>T<sub>E</sub>X or the TexMaker IDE.

### B. Design Requirements

In this subsection, break the problem description down into the fundamental requirements. Your proposed design should meet each of the criteria you create.

- This paper should provide a template for the user.
- This document should showcase the features and functions of the software.

## III. MODELING AND SIMULATION

In this section you should fully explain your design. Include any schematics, models or diagrams of the system. Show and explain the results of your simulation or model. Prove that your design meets the requirements laid out earlier. To convey this information utilize the tools described in the following subsection.

### A. Equations, Figures and Tables

Number equations consecutively. To make your equations more compact, you may use the solidus ( / ), the exp function, or appropriate exponents. Italicize Roman symbols for quantities and variables, but not Greek symbols. Use a long dash rather than a hyphen for a minus sign. Punctuate equations with commas or periods when they are part of a sentence, as in:

$$i_0 = \frac{\sqrt{2}V_s}{Z} \sin(\omega t - \theta) + \left( I_0 + \frac{E}{R} - \frac{\sqrt{2}V_s}{Z} \sin \theta \right) e^t \quad (1)$$

$$I_0 = \frac{\sqrt{2}V_s}{Z} \sin(\theta) \frac{1 + e^{-(R/L)(\pi/\omega)}}{1 - e^{-(R/L)(\pi/\omega)}} - \frac{E}{R} \quad (2)$$

You can reference the equations above in your document by using their defined label, [1] and [2]. Steady-state:  $I_0 = i_0(\omega t = 0) = i_0(\omega t = \pi)$ . Individual variables can also be called, such as  $\omega_0$ .

TABLE I  
TABLE TYPE STYLES

Table Head	Table Column Head		
	Table column subhead	Subhead	Subhead
copy	More table copy <sup>a</sup>		

<sup>a</sup>Sample of a Table footnote.

Figure Labels: Use words rather than symbols or abbreviations when writing Figure axis labels to avoid confusing the reader. As an example, write the quantity “Magnetization”, or “Magnetization, M”, not just “M”. If including units in the label, present them within parentheses. Do not label axes only with units. In the example, write “Magnetization (A/m)” or “Magnetization {A[m(1)]}”, not just “A/m”. Do not label axes with a ratio of quantities and units. For example, write “Temperature (K)”, not “Temperature/K”. See examples Fig. 1 and Fig. 2 in this document.

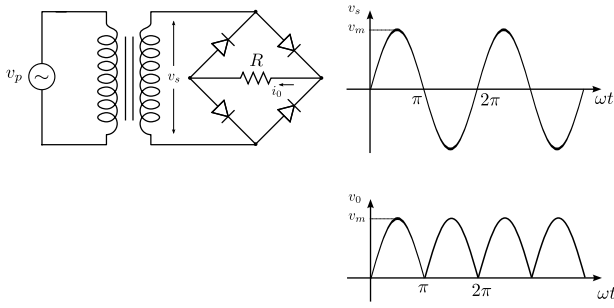


Fig. 1. An example figure. Figure captions should provide sufficient information to understand the image.

All figures should be clearly explained in the text. Furthermore, all figures should have a purpose, do not include irrelevant or redundant images. Doing so will only make the document more cluttered.

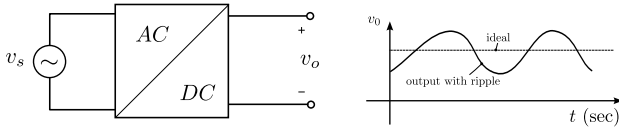


Fig. 2. An example figure. Figure captions should provide sufficient information to understand the image.

## B. References

The value outlines how to properly include citations in your report. The sources used are only used in an example context.

Please number citations consecutively within brackets [?]. The sentence punctuation follows the bracket [?]. Refer simply to the reference number, as in [?]<sup>1</sup>—do not use “Ref. [?]” or “reference [?]” except at the beginning of a sentence: “Reference [?] was the first . . .”

Number footnotes separately in superscripts. Place the actual footnote at the bottom of the column in which it was cited. Do not put footnotes in the abstract or reference list. Use letters for table footnotes.

Unless there are six authors or more give all authors’ names; do not use “et al.”. Papers that have not been published, even if they have been submitted for publication, should be cited as “unpublished” [?]. Papers that have been accepted for publication should be cited as “in press” [?]. Capitalize only the first word in a paper title, except for proper nouns and element symbols.

For papers published in translation journals, please give the English citation first, followed by the original foreign-language citation [?].

## IV. CONCLUSION AND DISCUSSION

The conclusion should be used to address the success of your design. Answer and discuss if your design met the requirements, had good performance, etc. If applicable, suggest future improvements or applications of the design.