Sign Language Recognition

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ABSTRACT – Every day we see many people who are facing illness like deaf, dumb and blind etc. They face difficulty to interact with others. Previously developed techniques are all sensors based and they didn't give the general solution.The main aim of the proposed project is to develop a cost effective system which can give voice to voiceless people with the help of Smart Gloves. With the proposed work sign language is converted into text and speech using flex sensor and microcontroller. It means that using smart gloves communication will not be a barrier between two different communities.

I. INTRODUCTION

The challenge faced by dumb and deaf people while communicating with the system in work place , since they cannot hear it, dangerous to go places alone because they cannot hear car, bikes, or other people coming. They cannot adapt to the surrounding environment quickly and respond to other normal people and expressing themselves is hard. The record history of sign language in western societies starts in the 17th century as a visual language or method of communication. Sign language is composed of a system of conventional gesture, mimic, hand sign and figure spelling, plus the use of hand position to represent letters of the alphabet. Sign can also represent complete idea or phrase. The main purpose is to provide speech and text output using hand gesture sign language without using any sensor for dumb people in smart way.

II. PROBLEM STATEMENT

- The problem statement revolves around the idea of a camera based sign language recognition system that would be in use for the deaf for converting sign language gestures to text and then text to speech. Our objective is to design a solution that is intuitive and simple.
- Dumb people use hand signs to communicate, hence normal people face problem in recognizing their language by signs made. Hence there is a need of the systems which recognizes the different signs and conveys the information to the normal people.

III. PROPOSED SYSTEM

In the proposed system the unable or dumb person should provide a gesture or sign image to the system. The system evaluates the sign input with mat lab image processing technique and classifies the input to the recognized identification. Later it initiates the voice media through the system when the input image matches with the given dataset. And the output will be shown in the text format too. This is a prototype to develop the concept of converting the sign language to speech andtext.

size (pts.)	Regular	Bold	Italic
8	Table captions,[a] table superscripts		
9		Abstract	
10	Section titles[a],references, tables, table names[a] , first letters in table captions[a], figure captions, footnotes, text subscripts, and superscripts, main text, equations, first		Sub-heading
12	letters in section titles[a] Authors'affiliations	Authors' names	

16	Paper
	title

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A.   Figures andTables

Place figures and tables at or near the top or bottom of columns where possible. Large figures and tables may span across both columns. Figure captions must be below the figures; table captions must be above the tables. Avoid placing figures and tables before their first mention in the text. Use the abbreviation "Fig. 1," even at the beginning of asentence.

Figure axis labels are often a source of confusion. Try to use words rather than symbols. As an example, write the quantity "Magnetization," or "Magnetization, M," not just "M." Put units in 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."

Multipliers can be especially confusing. Write "Magnetization (kA/m)" or "Magnetization (103 A/m)." Do not write "Magnetization (A/m) x 1000" because the reader would not know whether the top axis label in Fig. 1 meant 15 000 A/m. or 0.015 A/m. Figure labels must be legible, about 8-point type.

B.   Photographs

Color or black and white photos must occupy a single column, if possible, and images must be embedded. The caption is under the photograph.

C.   Abbreviations andAcronyms

Define abbreviations and acronyms the first time they are used in the text, even after they have been defined in the abstract. Common abbreviations such as IEEE, SI, MKS, CGS, sc, dc, and rms do not have to be defined. Do not use abbreviations in the title unless they are unavoidable.
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IV. MOTIVATION

While automatic speech recognition has now advanced to the point of being com-mercially available, automatic SLR is still in its infancy. Currently all commercial translation services are human based, and therefore expensive, due to the experi-enced personnel required.

Maintain uniformity throughout paper. Produce for maximum legibility. Type must be clear and crisp. The CD will be produced in color, so we suggest that all pictures be incolor.
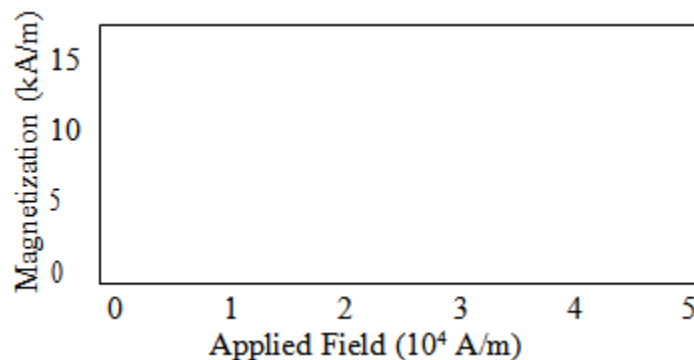

Fig. 1. Magnetization as a function of applied field. Note how the caption is centered in the column.

Do not use poor quality photostats, Ozalids, blueprints, hectographs, or photocopies. Maintain a firm, even dark, sharp impression throughout copy. Shades of blue, green, and brown do not reproduce effectively.

A.   Subheadings withLetters

Use two spaces after periods (full stops). Hyphenate complex modifiers: "zero-field-cooled   magnetization."   Avoid dangling participles, such as, "Using (1), the potential was calculated." Write instead, "The potential was calculated using (1)," or "Using (1), we calculated

the potential."
Use a zero before decimal points: "0.25," not ".25." Use "cm^3," not "cc." Do not mix complete spellings and abbreviations of units: "Wb2/m2" or "webers per square meter," not "webers/m2." Spell units when they appear in text: "…a few henries," not "…a few H." If your native language is not English, try to get a native English speaking colleague to proofread your paper.

B. Units

Use either SI (MKS) or CGS as primary units. (SI units are encouraged.) English units may be used as secondary units (in parentheses). An exception would be the use of English units as identifiers in trade, such as "3.5-inch disk drive."

Avoid combining SI and CGS units, such as current in amperes and magnetic field in oersteds. This often leads to confusion because equations do not balance dimensionally. If you must use mixed units, clearly state the units for each quantity that you use in anequation.

C. References

Number citations consecutively in square brackets [1]. The sentence punctuation follows the bracket [2]. Refer simply to the reference number, as in [3]. Do not use "Ref. [3]" or reference [3]" except at the beginning of a sentence: "Reference [3] 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 reference list. Use letters for table footnotes (see Table I). IEEE Transactions no longer use a journal prefix before the volume number. For example, use "IEEE Trans. Magn., vol. 25," not "vol.MAG-25.

Give all authors' names; do not use "et al." unless there are six authors or more. Papers that have not beenpublished, even if they have been submitted for publication, must be cited as "unpublished" [4]. Papers that have been accepted for publication must be cited as "in press" [5]. 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 [6].

V. SOME COMMONMISTAKES

The word "data" is plural, not singular. The subscript for the permeability of vacuum $_0$ is zero, not a lowercase letter "o." In American English, periods and commas are within quotation marks, like "this period." A parenthetical statement at the end of a sentence is punctuated outside of the closing parenthesis (like this). (A parenthetical sentence is punctuated within the parentheses.)

A graph within a graph is an "inset," not an "insert." The word alternatively is preferred to the word "alternately" (unless you really mean something that alternates). Do not use the word "essentially" to mean "approximately" or "effectively." Be aware of the different meanings of the homophones or homonyms, "affect" and "effect," "complement" and "compliment," "discreet" and "discrete," "principal" and "principle." Do not confuse "imply" and "infer," nor "ensure" and "insure." The prefix "non" is not a word; it must be joined to the word it modifies, usually without ahyphen.

There is no period after the "et" in the Latin abbreviation "et al." The abbreviation "i.e." means "that is," and the abbreviation "e.g." means "for example." When using these abbreviations, they should be followed by a comma, e.g., as used in this sentence. An excellent style manual and source of information for science writers is [7].

ACKNOWLEDGMENT

[7] M. Young, The Technical Writer's Handbook. Mill Valley, CA: University Science, 1989.

REFERENCES

[1] G. Eason, B. Noble, and I.N. Sneddon, "On certain integrals of Lipschitz-Hankel type involving products of Bessel functions," Phil. Trans. Roy. Soc. London, vol. A247, pp. 529-551, April1955.
[2] J. Clerk Maxwell, A Treatise on Electricity and Magnetism, 3rd ed., vol. 2. Oxford: Clarendon, 1892, pp.68-73.
[3] I.S. Jacobs and C.P. Bean, "Fine particles, thin films and exchange anisotropy," in Magnetism, vol.III, G.T. Rado and H. Suhl, Eds. New York: Academic, 1963, pp. 271-

350.

[4]   K.   Elissa,   "Title   of   paper   if known,"unpublished.

[5]   R. Nicole, Title of paper with only first word capitalized," J. Name Stand. Abbrev., inpress.

[6]   Y. Yorozu, M. Hirano, K. Oka, and Y. Tagawa, "Electron spectroscopy studies on magneto-optical mediaandplasticsubstrateinterface,"IEEETransl. J. Magn. Japan, vol. 2, pp. 740-741, August 1987