



# **HORN MORPHOA 3.0**

## **Morphological analysis and grapheme-phoneme conversion of Amharic words**

### Quick Reference

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21 January, 2019

### Installation

1. Uncompress the file that you downloaded. This will yield a directory (folder) called `HornMorphoA-3.0`, which contains all of the files that you need to run `HORN MORPHOA`.
2. Go to the `HornMorphoA-3.0` directory (folder), and enter the following, making sure that you are running some version of Python 3.

```
python setup.py install
```

### Use

#### STARTING THE PROGRAM

Start up the Python interpreter, again making sure that you are running at least Python 3.0, and type the following to load the program.

```
import hm
```

#### FUNCTIONS

Options for each function are shown with their default values.

**A(word)**

Options: raw=False

Performs morphological analysis of the word. For ambiguous words returns the first 5 analyses. Analyses are ordered by their estimated frequency. If raw is True, the raw analysis is returned; otherwise, the analyses is printed out, and nothing is returned.

```
>>> hm.A('የማያስፈልጋትስ')
word: የማያስፈልጋትስ
POS: verb, root: <fl_g>, citation: አስፈለገ
subject: 3, sing, masc
object: 3, sing, fem
grammar: imperfective, causative, relative, definite, negative
conjunctive suffix: s

>>> hm.A('am', 'አይደለኝም')
word: አይደለኝም
POS: copula, root: <ne>
subj: 3, sing, fem
negative

>>> hm.A('am', 'ለዘመዶቻችንም', raw=True)
[('zemed', [-acc, cnj='m', der=[-ass], -dis, +plr, pos='n',
poss=[+expl, +pl, -p2, +plr], pp='le', rl=[-acc, +p], v=None))]
```

**AF(input\_file)**

Options: output\_file=None

Runs A on the words in a file and writes them to output\_file, if one is given for output\_file, otherwise to standard output.

```
>>> hm.AF('hm/languages/am/data/ag.txt',
          'hm/languages/am/data/ag_out.txt')
Analyzing words in hm/languages/am/data/ag.txt
Writing to hm/languages/am/data/ag_out.txt
```

**S(word)**

Options: raw=False

Performs morphological segmentation on the word. Morphemes are separated by '-'; stems/roots appear within '{}'. If raw is True, a list of analyses is returned, each a part-of-speech, segmentation pair. For complex words, the part-of-speech is that of the stem or root, not the whole word. If raw is False (the default), the segmentations are printed out, with the part-of-speech appearing before the segmentation, separated by ':', and different analyses/segmentations separated by ';'.

```
>>> hm.S('ሲያጭበረብሩን')
ሲያጭበረብሩን -- v:s(cnj1)-y(sb=3sm|3p)-{Cbrbr+a12e3e4_5}(imprf,trans)-
u(sb=2p|3p)-n(ob=1p)

>>> hm.S('ለነገራቸው', raw=True)
[('n', 'le(pre)-{neger}-ac_ew(poss=3p)'), ('v', 'le(prepl)-(rel)-
{ngr+1e2_e3}(prf)-e(sb=3sm)-ac_ew(ob=3p)')]

>>> hm.S("አልማዝ")
```

```

አልማዝ -- n: {'almaz'}; nm_prs: {'almaz'}

SF(input_file)
  Options: output_file=None
  Runs S on the words in a file.

>>> hm.SF('hm/languages/am/data/ag.txt',
           'hm/languages/am/data/ag_out.txt')
Segmenting words in hm/languages/am/data/ag.txt
Writing to hm/languages/am/data/ag_out.txt

P(word)
  Options: raw=False
  Converts a word written in Ge'ez characters to a romanized form that shows consonant gemina-
  tion and the epenthetic vowel (represented by 'I'). If multiple pronunciations are possible, they
  are ordered by estimated frequency. If raw is True, a list of pronunciations is returned; other-
  wise, each is printed out, separated by spaces.

>>> hm.P("ይመታሉ")
yImetal_u yIm_et_al_u
>>> hm.P('እንደብር')
?IndIbIr

PF(input_file)
  Options: output_file=None
  Runs P on the words in a file.

>>> hm.PF('hm/languages/am/data/ag.txt',
           'hm/languages/am/data/ag_phon.txt')
Analyzing words in hm/languages/am/data/ag.txt
Writing analysis to hm/languages/am/data/ag_phon.txt

exit()
  Options: none
  Exits HornMorpho, saving any analyses or generated forms in a file to be loaded next time you
  use the program. This will significantly speed up the performance of the program.

>>> hm.exit()

```