



The **unitipa** package

Niranjan

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 <https://ctan.org/pkg/unitipa>
 <https://gitlab.com/niranjanvikastambe/unitipa>

This package converts Unicode characters into TIPA commands, which gives us **tipa** typefaces, without actually learning the **tipa** commands in much details. This package needs Lua \LaTeX as the compiler for correctly typesetting the IPA diacritics. TIPA was designed to match with the Computer Modern design, no other IPA font matches with traditional \LaTeX font. This package is helpful for getting the beautiful **tipa** shapes with Unicode characters. This package assumes that the user knows how to type IPA Unicode. Following is the list of symbols that *cannot* be used with the traditional \LaTeX font. Every other symbol in the IPA chart is present in the current \LaTeX font.

Plosives t d j g ʔ

Nasals m ŋ n¹ ɳ

Trills b r

Taps or flaps v ɾ ɽ

Fricatives ɸ β θ ð ʃ ʂ z ʝ χ ʁ ʕ ɦ

Lateral fricatives ɬ ɮ

Approximants ʋ ɹ ɻ ɰ

Lateral approximants ɭ ʎ ʟ

Affricates tʃ ɟ ts dz

Close vowels i ɨ ʉ

Near-close vowels ɪ ʏ ʊ

Close-mid vowels ɐ ɤ

Open-mid vowels ɛ ɜ ɞ ʌ ɔ

Near-open vowels ɐ ɶ ɔ

Open vowels ɑ²

¹Added in v0.2

²Reported ɶ added by Heller, Thomas in v0.2.

Bug report - <https://gitlab.com/niranjanvikastambe/unitipa/-/issues/1>

MR - https://gitlab.com/niranjanvikastambe/unitipa/-/merge_requests/1


```

15 \DeclareTextFontCommand{\ipatext}{\ipa}
16 \def\unitipa@ipafont#1{\pgfkeys{unitipa/.cd,#1}}
17 \DeclareOption*{\expandafter\unitipa@ipafont\expandafter{\CurrentOption}}

```

Option ipafont provided using pgfkeys.

```

18 \newif\ifnodiaticritics
19 \nodiaticriticsfalse
20 \DeclareOption{nodiaticritics}{\nodiaticriticstrue}
21 \ProcessOptions\relax
22 \ifnodiaticritics
23 \relax
24 \else
25 \RequirePackage{iftex}
26 \RequirePackage{luacode}
27 \RequireLuaTeX
28 %% Dependent diacritic marks
29 \begin{luacode}
30     function voiceless ( s )
31         s = unicode.utf8.gsub ( s , '(%a) ', '\\textsubring{%1}' )
32         return s
33     end
34 \end{luacode}
35 \directlua{luatexbase.add_to_callback("process_input_buffer",
36     voiceless, "voiceless")}
37 \begin{luacode}
38     function voiced ( s )
39         s = unicode.utf8.gsub ( s , '(%a) ', '\\textsubwedge{%1}' )
40         return s
41     end
42 \end{luacode}
43 \directlua{luatexbase.add_to_callback("process_input_buffer",
44     voiced, "voiced")}
45 \begin{luacode}
46     function morerounded ( s )
47         s = unicode.utf8.gsub ( s , '(%a) ', '\\textsubrhalfring{%1}' )
48         return s
49     end
50 \end{luacode}
51 \directlua{luatexbase.add_to_callback("process_input_buffer",
52     morerounded, "morerounded")}
53 \begin{luacode}
54     function lessrounded ( s )
55         s = unicode.utf8.gsub ( s , '(%a) ', '\\textsublhalfring{%1}' )
56         return s
57     end
58 \end{luacode}
59 \directlua{luatexbase.add_to_callback("process_input_buffer",
60     lessrounded, "lessrounded")}
61 \begin{luacode}
62     function advanced ( s )
63         s = unicode.utf8.gsub ( s , '(%a) ', '\\textsubplus{%1}' )
64         return s
65     end
66 \end{luacode}
67 \directlua{luatexbase.add_to_callback("process_input_buffer",

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68     advanced, "advanced"))}
69 \begin{luacode}
70     function retracted ( s )
71         s = unicode.utf8.gsub ( s , '(%a)', '\\textsubbar{%1}' )
72         return s
73     end
74 \end{luacode}
75 \directlua{luatexbase.add_to_callback("process_input_buffer",
76     retracted, "retracted")}
77 \begin{luacode}
78     function midcentralized ( s )
79         s = unicode.utf8.gsub ( s , '(%a)', '\\textovercross{%1}' )
80         return s
81     end
82 \end{luacode}
83 \directlua{luatexbase.add_to_callback("process_input_buffer",
84     midcentralized, "midcentralized")}
85 \begin{luacode}
86     function syllabic ( s )
87         s = unicode.utf8.gsub ( s , '(%a)', '\\textsyllabic{%1}' )
88         return s
89     end
90 \end{luacode}
91 \directlua{luatexbase.add_to_callback("process_input_buffer",
92     syllabic, "syllabic")}
93 \begin{luacode}
94     function nonsyllabic ( s )
95         s = unicode.utf8.gsub ( s , '(%a)', '\\textsubarch{%1}' )
96         return s
97     end
98 \end{luacode}
99 \directlua{luatexbase.add_to_callback("process_input_buffer",
100     nonsyllabic, "nonsyllabic")}
101 \begin{luacode}
102     function breathyvoiced ( s )
103         s = unicode.utf8.gsub ( s , '(%a)', '\\textsubumlaut{%1}' )
104         return s
105     end
106 \end{luacode}
107 \directlua{luatexbase.add_to_callback("process_input_buffer",
108     breathyvoiced, "breathyvoiced")}
109 \begin{luacode}
110     function linguolabial ( s )
111         s = unicode.utf8.gsub ( s , '(%a)', '\\textseagull{%1}' )
112         return s
113     end
114 \end{luacode}
115 \directlua{luatexbase.add_to_callback("process_input_buffer",
116     linguolabial, "linguolabial")}
117 \begin{luacode}
118     function velarized ( s )
119         s = unicode.utf8.gsub ( s , '(%a)', '\\textsuperimposetilde{%1}' )
120         return s
121     end

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122 \end{luacode}
123 \directlua{luatexbase.add_to_callback("process_input_buffer",
124     velarized, "velarized")}
125 \begin{luacode}
126     function raised ( s )
127         s = unicode.utf8.gsub ( s , '(%a) ', '\\textraising{%1}' )
128         return s
129     end
130 \end{luacode}
131 \directlua{luatexbase.add_to_callback("process_input_buffer",
132     raised, "raised")}
133 \begin{luacode}
134     function lowered ( s )
135         s = unicode.utf8.gsub ( s , '(%a) ', '\\textlowering{%1}' )
136         return s
137     end
138 \end{luacode}
139 \directlua{luatexbase.add_to_callback("process_input_buffer",
140     lowered, "lowered")}
141 \begin{luacode}
142     function advancedtr ( s )
143         s = unicode.utf8.gsub ( s , '(%a) ', '\\textadvancing{%1}' )
144         return s
145     end
146 \end{luacode}
147 \directlua{luatexbase.add_to_callback("process_input_buffer",
148     advancedtr, "advancedtr")}
149 \begin{luacode}
150     function retractedtr ( s )
151         s = unicode.utf8.gsub ( s , '(%a) ', '\\textretracting{%1}' )
152         return s
153     end
154 \end{luacode}
155 \directlua{luatexbase.add_to_callback("process_input_buffer",
156     retractedtr, "retractedtr")}
157 \begin{luacode}
158     function dental ( s )
159         s = unicode.utf8.gsub ( s , '(%a) ', '\\textsubbridge{%1}' )
160         return s
161     end
162 \end{luacode}
163 \directlua{luatexbase.add_to_callback("process_input_buffer",
164     dental, "dental")}
165 \begin{luacode}
166     function apical ( s )
167         s = unicode.utf8.gsub ( s , '(%a) ', '\\textinvsubbridge{%1}' )
168         return s
169     end
170 \end{luacode}
171 \directlua{luatexbase.add_to_callback("process_input_buffer",
172     apical, "apical")}
173 \begin{luacode}
174     function laminal ( s )
175         s = unicode.utf8.gsub ( s , '(%a) ', '\\textsubsquare{%1}' )

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176     return s
177 end
178 \end{luacode}
179 \directlua{luatexbase.add_to_callback("process_input_buffer",
180     laminal, "laminal")}
181 \begin{luacode}
182     function unaudible ( s )
183     s = unicode.utf8.gsub ( s , '(%a) ', '%1\\textcorner' )
184     return s
185     end
186 \end{luacode}
187 \directlua{luatexbase.add_to_callback("process_input_buffer",
188     unaudible, "unaudible")}
189 %% Tie bars
190 \begin{luacode}
191     function tiebarup ( s )
192     s = unicode.utf8.gsub ( s , '(%a) (%a)', '\\texttopleftbar{%1%2}' )
193     return s
194     end
195 \end{luacode}
196 \directlua{luatexbase.add_to_callback("process_input_buffer",
197     tiebarup, "tiebarup")}
198 \begin{luacode}
199     function tiebardown ( s )
200     s = unicode.utf8.gsub ( s , '(%a) (%a)', '\\textbottomtiebar{%1%2}' )
201     return s
202     end
203 \end{luacode}
204 \directlua{luatexbase.add_to_callback("process_input_buffer",
205     tiebardown, "tiebardown")}
206 \begin{luacode}
207     function risefall ( s )
208     s = unicode.utf8.gsub ( s , '(%a) ', '\\textrisefall{%1}' )
209     return s
210     end
211 \end{luacode}
212 \directlua{luatexbase.add_to_callback("process_input_buffer",
213     risefall, "risefall")}
214 \begin{luacode}
215     function rising ( s )
216     s = unicode.utf8.gsub ( s , '(%a) ', '\\texthighrise{%1}' )
217     return s
218     end
219 \end{luacode}
220 \directlua{luatexbase.add_to_callback("process_input_buffer",
221     rising, "rising")}
222 \begin{luacode}
223     function falling ( s )
224     s = unicode.utf8.gsub ( s , '(%a) ', '\\textlowrise{%1}' )
225     return s
226     end
227 \end{luacode}
228 \directlua{luatexbase.add_to_callback("process_input_buffer",
229     falling, "falling")}

```

230 \fi

Option `nodiacritics` provided for using the package without Lua \LaTeX . Enabling this option won't print any diacritics. Help from Samcarter and Mico Loretan on different platforms³ gave a right direction to this code.

```
231 %% Pulmonic Consonants
232 %% Plosives
233 \newunicodechar{t}{\texttrtailt}
234 \newunicodechar{d}{\texttrtaild}
235 \newunicodechar{j}{\textbardotlessj}
236 \newunicodechar{c}{\textscg}
237 \newunicodechar{ʔ}{\textglotstop}
238 %% Nasals
239 \newunicodechar{ɱ}{\textltailm}
240 \newunicodechar{ɳ}{\texttrtailn}
241 \newunicodechar{ɲ}{\textltailn} %% Added in v0.2
242 \newunicodechar{ɴ}{\textscn}
243 %% Trills
244 \newunicodechar{ʙ}{\textscb}
245 \newunicodechar{ʀ}{\textscr}
246 %% Taps or flaps
247 \newunicodechar{ɹ}{\ipatext{v}} %% Sorry for the bad typography!
248 \newunicodechar{ɻ}{\textfishhookr}
249 \newunicodechar{ɽ}{\textrtailr}
250 %% Fricatives
251 \newunicodechar{ɸ}{\textphi}
252 \newunicodechar{β}{\textbeta}
253 \newunicodechar{θ}{\texttheta}
254 \newunicodechar{ʃ}{\textesh}
255 \newunicodechar{ʒ}{\textyogh}
256 \newunicodechar{ɬ}{\textrtails}
257 \newunicodechar{ɮ}{\textrtailz}
258 \newunicodechar{ɟ}{\textctj}
259 \newunicodechar{ɣ}{\textgamma}
260 \newunicodechar{χ}{\textchi}
261 \newunicodechar{ɰ}{\textinvscr}
262 \newunicodechar{ʁ}{\textrevglotstop}
263 \newunicodechar{ɦ}{\textthth}
264 %% Lateral fricatives
265 \newunicodechar{ɬ̺}{\textbeltl}
266 \newunicodechar{ɮ̺}{\textlyoghlig}
267 %% Approximants
268 \newunicodechar{ɹ̥}{\textscriptv}
269 \newunicodechar{ɻ̥}{\textturnr}
270 \newunicodechar{ɹ̥̺}{\textturnrrtail}
271 \newunicodechar{ɹ̥̺̺}{\textturnmrleg}
272 %% Lateral approximants
273 \newunicodechar{ɭ}{\textrtaill}
274 \newunicodechar{ʎ}{\textturny}
275 \newunicodechar{ɮ̺̺}{\textsccl}
276 %% Affricates
277 \newunicodechar{t͡ʃ}{\texttेशlig}
278 \newunicodechar{d͡ʒ}{\textdyoghlig}
```

³Samcarter's [answer](#) on TopAnswer & Mico Loretan's [answer](#) on TeX.SE.

```

279 \newunicodechar{ts}{\texttslig}
280 \newunicodechar{dz}{\textdzlig}
281 %% Vowels
282 %% Close
283 \newunicodechar{i}{\textbari}
284 \newunicodechar{u}{\textbaru}
285 \newunicodechar{u}{\textturnm}
286 %% Near-close
287 \newunicodechar{ɪ}{\textsci}
288 \newunicodechar{ʏ}{\textscy}
289 \newunicodechar{ʊ}{\textupsilon}
290 %% Close-mid
291 \newunicodechar{ø}{\textbaro}
292 \newunicodechar{ɤ}{\textramshorns}
293 %% Open-mid
294 \newunicodechar{ɛ}{\textepsilon}
295 \newunicodechar{ɜ}{\textrevepsilon}
296 \newunicodechar{ɜ}{\reflectbox{\textcloseepsilon}} %% Latest changes
297 \newunicodechar{ʌ}{\textturnv}
298 \newunicodechar{ɔ}{\textopeno}
299 %% Near-open
300 \newunicodechar{ɐ}{\textturna}
301 \newunicodechar{æ}{\textscoelig}
302 \newunicodechar{ɒ}{\textturnscripta}
303 %% Open
304 %% Reported and added by Heller, Thomas on 2021/03/13
305 %% Bug report - https://gitlab.com/niranjankastambe/unitipa/-/issues/1
306 %% MR - https://gitlab.com/niranjankastambe/unitipa/-/merge\_requests/1
307 \newunicodechar{ɑ}{\textscripta}
308 %% Non-Pulmonic
309 \newunicodechar{ʘ}{\textbullseye}
310 \newunicodechar{|}{\textpipe}
311 \newunicodechar{!}{\textipa{!}}
312 \newunicodechar{#}{\textdoublebarpipe}
313 \newunicodechar{||}{\textdoublepipe}
314 %% Voiced Implosives
315 \newunicodechar{ɓ}{\texthtb}
316 \newunicodechar{ɗ}{\texthtd}
317 \newunicodechar{ɟ}{\texthtbardotlessj}
318 \newunicodechar{ɠ}{\texthtg}
319 \newunicodechar{ɠ}{\texthtscg}
320 \newunicodechar{'}{'}
321 %% Suprasegmentals
322 \newunicodechar{'}{\textprimstress}
323 \newunicodechar{.}{\textsecstress}
324 \newunicodechar{:}{\textlengthmark}
325 \newunicodechar{˙}{\texthalflength}
326 \newunicodechar{ᳵ}{\textturnw}
327 \newunicodechar{ᳶ}{\textturnh}
328 \newunicodechar{᳷}{\textsch}
329 \newunicodechar{᳸}{\textbarrevglotstop}
330 \newunicodechar{᳹}{\textbarglotstop}
331 \newunicodechar{ᳺ}{\textctc}
332 \newunicodechar{᳻}{\textctz}

```



```

333 \newunicodechar{l}{\textturnlonglegr}
334 \newunicodechar{h}{\texththeng}
335 %% Diacritics
336 \newunicodechar{^h}{\textsuperscript{h}}
337 \newunicodechar{^h}{\textsuperscript{h}}
338 \newunicodechar{^w}{\textsuperscript{w}}
339 \newunicodechar{^j}{\textsuperscript{j}}
340 \newunicodechar{^y}{\textsuperscript{y}}
341 \newunicodechar{^i}{\textsuperscript{i}}
342 %% Tones independent diacritics
343 \newunicodechar{^v}{\textdownstep}
344 \newunicodechar{^u}{\textupstep}
345 %% \newunicodechar{ }{\textglobrise} %% Not working :(
346 %% \newunicodechar{ }{\textglobfall} %% Need help here
347 \end{package}

```

Change History

v0.1		v0.2
General: Initial version	9	General: Added characters ‘ɑ’ and ‘ɲ’ . 9