Computational Linguistics
LaTeX Cheat-Sheet

Contents

1 Basic Math & Statistics **1**
1.1 Most common symbols 1
1.2 Useful statistical examples 1

2 IPA Phonetic Symbols (`tipauni`) **1**

3 Linguistic Examples & Glosses (`gb4e`) **2**

4 Syntax Trees (`forest`) **2**

5 Multilingual Text (`polyglossia` + `csquotes`) **2**

6 Extension Packages **3**

7 Quick Tips **3**

1 Basic Math & Statistics

- Inline math: `$P(w)$` → $P(w)$
- Display math: `\[ ... \]` or `equation` environment

1.1 Most common symbols

Command	Result	Command	Result
`\alpha`	α	`\beta`	β
`\lambda`	λ	`\theta`	θ
`\mu`	μ	`\sigma`	σ
`\sum`	$\sum$	`\prod`	$\prod$
`\frac{a}{b}`	$\frac{a}{b}$	`\sqrt{x}`	$\sqrt{x}$
`\log`	$\log$	`\exp`	$\exp$
`\infty`	∞	`\approx`	$\approx$
`\leq`	$\leq$	`\geq`	$\geq$
`\times`	$\times$	`\cdot`	$\cdot$
`\rightarrow`	$\rightarrow$	`\Rightarrow`	$\Rightarrow$

1.2 Useful statistical examples

```
P(w_i | w_{i-1}) = \frac{C(w_{i-1}, w_i)}{C(w_{i-1})}

\text{Precision} = \frac{TP}{TP + FP}
\text{Recall}    = \frac{TP}{TP + FN}
\text{F1}        = 2 \cdot \frac{P \cdot R}{P + R}
```

2 IPA Phonetic Symbols (`tipauni`)

- Preferred modern way: type the Unicode character directly (if your font supports it).
- Classic shortcuts still work with `\textipa{...}`.

Command / Unicode	Result	Command / Unicode	Result
`\textipa{[aI]}` / aɪ	[aɪ]	`\textipa{[E]}` / ɛ	[ɛ]
`\textipa{[S]}` / ʃ	[ʃ]	`\textipa{[Z]}` / ʒ	[ʒ]
`\textipa{[T]}` / θ	[θ]	`\textipa{[D]}` / ð	[ð]
`\textipa{[N]}` / ŋ	[ŋ]	`\textipa{[@]}` / ə	[ə]
`\textipa{[p~]}` / p̃	[p̃]	`\textipa{[e:]}` / eː	[eː]

3 Linguistic Examples & Glosses (`gb4e`)

```
\begin{exe}
  \ex \gll  Elle a mangé une pomme. \\
            She has eaten an  apple. \\
      \glt  `She ate an apple.'
\end{exe}
```

Result:

(1) Elle a mangé une pomme.
She has eaten an apple.
'She ate an apple.'

More examples in one block:

```
\begin{exe}
  \ex \gll ... \\
           ... \\
      \glt  `...'
  \ex \gll ... \\
           ... \\
      \glt  `...'
\end{exe}
```

4 Syntax Trees (`forest`)

```
\begin{forest}
  [S
    [NP [Det the] [N cat]]
```

```
    [VP [V sleeps]]
  ]
\end{forest}
```

5 Multilingual Text (`polyglossia` + `csquotes`)

```
\textfrench{Bonjour !}
\textspanish{¡Hola!}
\textitalian{Ciao!}
\textportuguese{Olá!}

\enquote{This automatically uses the correct quotation marks.}
```

6 Extension Packages

Load these as you grow into them — all are well-maintained and ship with `texlive-full`.

- `microtype` — better line breaks, especially in multilingual documents.
- `csquotes` — language-aware quotes via `\enquote{...}`.
- `siunitx` — aligned numeric tables and in-text numbers (`\num{1.23e-4}`, `\SI{95}{\percent}`).
- `pgfplots` — vector-based plots (including Zipf-style log-log plots).

7 Quick Tips

- Always compile with **LuaLaTeX**.
- Use `latexmk -lualatex -pdf file.tex` to handle multi-pass compilation + Biber automatically.
- For bibliography in linguistics: `biblatex` with `style=unified` (LSA) or `style=authoryear`.
- Need a symbol? Use Detexify or the Comprehensive LaTeX Symbol List.