The `hand` package

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Abstract

The `hand` package is the LaTeX interface to the special-purpose `handlatex` frontend. It provides a simple environment, `\handpar`, that can be used to inject seemingly random variations in placement, interlining and orientation of paragraphs, as well as visual word shifting. Combined with appropriate fonts, it reasonably mimics the typical rendering of a sloppy handwritten text on delinated paper.

1 Usage

1.1 Invokation

Once installed, the `hand` package can be included in a LaTeX document preamble with the usual:

```
\usepackage[]{hand}
```

1.2 Mandatory `handlatex` Frontend

Any document using `hand` must be compiled through the special-purpose `handlatex` frontend (shipping with this package); this frontend will in turn invoke some LaTeX-capable backend (`latex`, `pdflatex`, etc.), specifiable by the user (see `driver` option below), to generate the final output.

Have a look at the provided `README` if you need further information on the frontend. Online help is also available via `handlatex --help`.

2 User Interface

`handpar` The `\handpar` environment is the only one from the `hand` package you should be using directly; it basically randomizes the appearance of the enclosed paragraph to give it a more "handwritten" look. Typical use would look like:

*Latest version available at all time from http://code.google.com/p/handlatex/.

```
\begin{handpar}
Lorem ipsum dolor sit amet, feugiat ad metus vestibulum at
eget. Condimentum est dictumst, quis cras congue et turpis, ornare
lacinia hendrerit platea in. Nulla est proin pellentesque hendrerit
nulla vitae.
\end{handpar}
```

Paragraph and words orientation as well as linespacing will change pseudo-randomly, according to package options, as specified below. A demo document using `xelatex` from TEX Live, `sample.tex`, is distributed along the package.

3 Options

Options are key-value pairs, specified when including the `hand` package, like this:

```
\usepackage[driver=pdflatex, freqword=0.05]{hand}
```

Options set this way can be overruled directly from the command line; each key presented below can be set using a "gnu-style" long argument passed to `handlatex`: see `handlatex --help` for details.

`driver` Used by `handlatex` to determine which backend to invoke (`latex`, `pdflatex`, `xelatex`, etc.).
Default value: `latex`

> The `handlatex` frontend is just a pre-processor: at compilation time, the real heavy-lifting will be performed by the selected `driver`, automatically called by `handlatex`. The document should follow whatever requirements this `driver` has.

`encoding` Document character set used for input (`ascii`, `latin1`, `utf-8`, etc.).
Default value: `utf-8`

> If ever the document encoding is not a strict superset of ASCII, `handlatex` might not be able to parse the document at all, let alone identify the `encoding` option! In this case, you can always force encoding selection right on the command line: `handlatex --encoding=some_encoding ...`

`minparangle` The minimal integer value in degrees the `\handpar` environment should be rotated by (around its lower left corner, counterclockwize).
Default value: -2

`maxparangle` The maximal integer value in degrees the `\handpar` environment should be rotated by (around its lower left corner, counterclockwize).
Default value: 2

> The paragrah angle (parangle $\in$ [minparangle, maxparangle]), follows a simple discrete Markov walk: consecutive `\handpar` environements will be rotated by angles no more different than one degree.

`minparscale` The minimal float value the `\baselineskip` or the `\handpar` environment should be multiplied by.
Defaul value: 0.8

`maxparscale` The maximal float value the `\baselineskip` or the `\handpar` environment should be multiplied by.
Defaul value: 1.25

> Paragrah interlining ("scaling") is a uniform variable where parscale $\in$ [minparscale, maxparscale].

`lowwordangle` The low angle in degree any picked word (see `freqword` below) belonging to the `\handpar` environment can be rotated around its bottom-right corner.
Default value: -2

`highwordangle` The high angle in degree any picked word (see `freqword` below) belonging to the `\handpar` environment can be rotated around its bottom-right corner.
Default value: 2

> Picked words rotation will be either `lowwordangle` or `highwordangle`, with the same odds.

`freqword` The frequency at which a word belonging to the `\handpar` environment should be "visual shifted" using the `lowwordangle` and `highwordangle` options above.
Default value: 0.4

> in `handlatex`, word selection is implemented as a mere Bernouilli variable (i.e. a sequence of independent Bernouilli trials of probability freqword).

4 Limitations / Bugs

- `\handpar` parsing in `handlatex` is pretty limited right now: it chokes silently and bails out on any closing brace ("}") used inside a `\handpar` environment; this basically means that if you try to use any LaTeX command at all inside one of them, you will end up with a plain, unstylised paragraph...
- `handlatex` is implemented in Python, not as a set of TeX macros or in Web2C[1]: from a pure LaTeX point of view, it is bound to be less portable.

5 Legalese

[1] I tried writing a pure TeX implementation for two days... For the life of me, I just couldn't; I swear the fact a language is Turing-complete will no longer be a compelling enough argument for me to bite the bullet – so is `brainfuck`, after all.

6 The Code

6.1 Initial imports and checks

```
\@ifundefined{handLaTeXRevision}{%
\PackageError{hand}{handlatex is required to compile this document}}%
```

6.2 Options handling

```
\define@key{interface}{driver}[1]{\def\hand@driver{#1}}%
\define@key{interface}{encoding}[1]{\def\hand@encoding{#1}}%
\define@key{interface}{minparangle}[1]{\def\hand@minparangle{#1}}%
\define@key{interface}{maxparangle}[1]{\def\hand@maxparangle{#1}}%
\define@key{interface}{minparscale}[1]{\def\hand@minparscale{#1}}%
\define@key{interface}{maxparscale}[1]{\def\hand@maxparscale{#1}}%
\define@key{interface}{lowwordangle}[1]{\def\hand@lowwordangle{#1}}%
\define@key{interface}{highwordangle}[1]{\def\hand@highwordangle{#1}}%
\define@key{interface}{freqword}[1]{\def\hand@freword{#1}}%
%%
\newcommand{\Parse@options}{}%
\long\def\Parse@Options#1\@nil{\setkeys{interface}{#1}}%
\DeclareOption*{\expandafter\Parse@Options\CurrentOption\@nil}%
\ProcessOptions%
%%
\newcommand{\hand@check}[2]{\@ifundefined{#1}{\@namedef{#1}{#2}}{}}%
```

```
\hand@check{hand@driver}{\handdriver}%
\hand@check{hand@encoding}{\handencoding}%
\hand@check{hand@minparangle}{\handminparangle}%
\hand@check{hand@maxparangle}{\handmaxparangle}%
\hand@check{hand@minparscale}{\handminparscale}%
\hand@check{hand@maxparscale}{\handmaxparscale}%
\hand@check{hand@lowwordangle}{\handlowwordangle}%
\hand@check{hand@highwordangle}{\handhighwordangle}%
\hand@check{hand@freqword}{\handfreqword}%
\PackageInfo{hand}{ %
  driver: \hand@driver, %
  encoding: \hand@encoding, %
  minparangle: \hand@minparangle, %
  maxparangle: \hand@maxparangle, %
  minparscale: \hand@minparscale, %
  maxparscale: \hand@maxparscale, %
  lowwordangle: \hand@lowwordangle, %
  highwordangle: \hand@highwordangle, %
  freqword: \hand@freqword }%
%%
```

6.3 The Environments

```
\newcommand{\handword}[2]%
{%
\rotatebox[origin=rb]{#1}{#2}%
}%
%%
\newcommand{\hand@parfullbeg}[2]%
{%
\begin{turn}{#1}\begin{minipage}{\linewidth}%
\begin{spacing}{#2}%
}%
%%
\newcommand{\hand@parfullend}%
{\end{spacing}\end{minipage}\end{turn}}%
%%
\newenvironment{handparfull}[2]%
{\hand@parfullbeg{#1}{#2}}{\hand@parfullend}%
%%
\newenvironment{handpar}%
{\hand@parfullbeg{0}{1}}{\hand@parfullend}%
```

■