

GasTeX: Graphs and Automata Simplified in T_EX

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v3.0

Abstract

This is a very minimal startup guide including some examples.

For the documentation, please see <http://www.lsv.fr/~gastin/gastex/index.html>.

The package consists of two files `gastex.sty` and `gastex.pro`.

- `gastex.sty` contains the definition of all GasTeX macros. This file could be in your working folder but it is best placed where `.sty` files are, e.g.,

```
.../texmf-dist/tex/latex/gastex/gastex.sty
```

or

```
.../texmf-local/tex/latex/gastex/gastex.sty
```

- `gastex.pro` which contains all the postscript procedures used to actually draw the pictures. This file could be in your working folder but it is best placed where `.pro` files are, e.g.,

```
.../texmf-dist/dvips/gastex/gastex.pro
```

or

```
.../texmf-local/dvips/gastex/gastex.pro
```

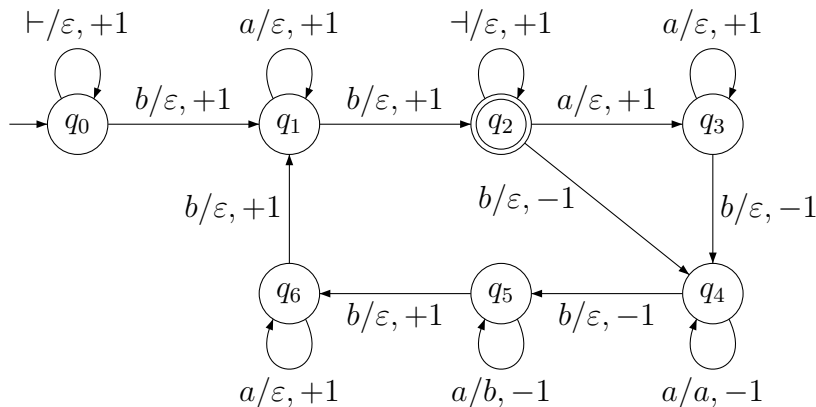
This documentation file simply contains a few simple examples on how to make figures with GasTeX. It should be compiled with

```
pdflatex --shell-escape gastex-doc.tex
```

or

```
pdflatex --enable-write18 gastex-doc.tex
```

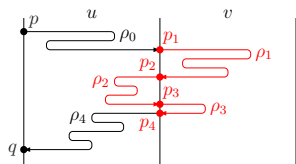
The first example below is a 2-way deterministic finite state transducer. It consists of a `picture` environment which contains the `GasTeX` commands for nodes and transitions.



The second one is in Figure 1. The pictures have been defined at the beginning of the \LaTeX document, with the `name` and `ignore` optional parameters given to the `picture` environment. These pictures are generated but not inserted immediately. Instead, the `\gusepicture` command allows to include each named picture, possibly multiple times at different places.

All pictures defined in `picture` environments are compiled and stored in a file called `filename-pics.pdf`, one picture per page. These pictures could be included in any \LaTeX file, possibly another \LaTeX file which need not use the `GasTeX` package, simply by using `\includegraphics` as follows:

```
\includegraphics[page=2,scale=0.6]{gastex-doc-pics.pdf}
```



This is convenient for instance when sending the \LaTeX file to Arxiv or to an editor (journal, proceedings) which does not allow the `--shell-escape` option when compiling with `pdflatex`. Actually, `GasTeX` does this automatically for you. When loading the package, set the `recompilepics` option to `false` as follows:

```
\usepackage[pdflatex,recompilepics=false]{gastex}
```

then you may compile without the `--shell-escape` option

```
pdflatex gastex-doc.tex
```

and `GasTeX` automatically calls `\includegraphics` to include the pictures that have been previously generated and stored in the file `gastex-doc-pics.pdf`.

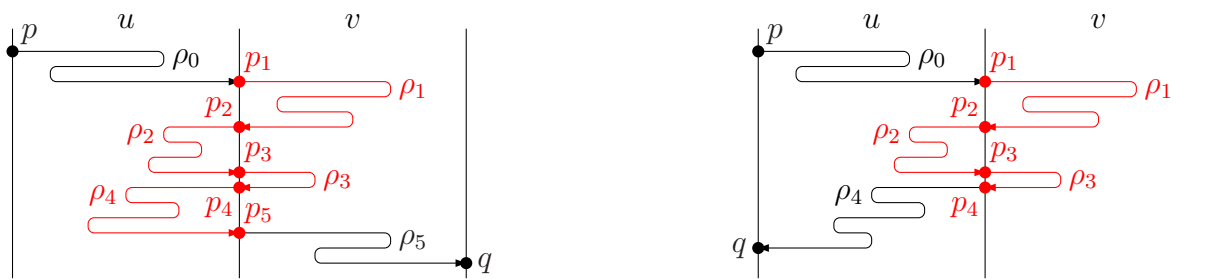


Figure 1: Decomposition of a left-right run and a left-left run over the product $w = uv$.