`moderncv` User Guide

Package v2.3.1

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Abstract

The `moderncv` package provides a document class for typesetting modern curriculum vitæ and cover letters in various styles. Five predefined styles are available, each of which can be adjusted through various options for headings, footers and colors. It is fairly customizable, allowing the user to adjust the look and feel of each style to their liking. Several macros allow the user to add content to the CV and format it in a consistent way. A letter of motivation consistent with the style is part of the template as well.

Contents

1   Getting started

1.1   How to read this manual

This manual is organized as follows. The current section explains on how to get started with the `moderncv` package, i.e. how to install required packages. Section 2 explains how to work with the `moderncv` template file step by step. Section 3 details the customizations that the user can make: the different styles, their options, colors and tips and tricks. Section 4 details the packages that `moderncv` uses, known problems and possible solutions to those problems.

1.2   Installation instructions

If the `moderncv` package does not ship with your LATEX distribution or if the installed version is too old, grab the `moderncv` code from CTAN or GitHub:

https://ctan.org/pkg/moderncv

https://github.com/moderncv/moderncv

Note.   Depending on your LATEX distribution, you may have to install some additional packages. Section 4.2 lists all the packages that `moderncv` requires to be installed on your system.

2   The `moderncv` template step by step

This section is meant to be a quick reference to the `moderncv` package and should contain enough information to get a first working CV typeset. The easiest way to get started with `moderncv` is to adjust the template that comes with the package. If the `moderncv` package is part of your LATEX distribution, search for the folder `moderncv` on your system containing all files of the package. In this folder, there should be a file called `template.tex`. If you downloaded the package from GitHub or CTAN, go to the folder of the newly downloaded (and possibly extracted) package to find the file `template.tex` there.

Note.   If you downloaded `moderncv` from GitHub or CTAN and moved `template.tex` to another folder, make sure to adjust the `TEXINPUTS` variable to find the newly downloaded package. Otherwise, either the package version provided by your LATEX distribution gets used or LATEX throws an error if there is no other version installed.

Test your setup by compiling `template.tex` and looking at the result.

Note.   The `moderncv` package should compile with `pdflatex`, `lualatex` and `xelatex`. However, not all icons are available when using `pdflatex`, so using either `lualatex` or `xelatex` *is highly recommended.*

2.1 Basic setup

A document using the `moderncv` document class gets set up as any other document class. We will go through the template step by step.

Configuring document class options

The `moderncv` document class is loaded as per usual, by

```
\documentclass[<options>]{moderncv}
```

where at most one value for each option can be passed to the document class:

paper:	a4paper, a5paper, b5paper, letterpaper, legalpaper, executivepaper, landscape
font family:	sans, roman
font size:	10pt, 11pt, 12pt
draft/final:	draft, final

By default, the `moderncv` document class uses a4paper, 11pt, final.

Configuring `moderncv` style and color

Choose a `moderncv` style and color by adjusting the commands

```
\moderncvstyle{<style>}
\moderncvcolor{<color>}
```

As explained in `template.tex`, the possible values are

style:	casual (default), classic, banking, oldstyle, fancy
color:	black ■, blue ■ (default), burgundy ■, green ■, grey ■, orange ■, purple ■, red ■

Note. Some of the styles take additional options to fine-tune their appearance. To keep this overview short, the description of these options is postponed to section 3.1.

Font family and page numbering

The default font family is set by the line `\renewcommand{\familydefault}{\sfdefault}` in `template.tex`. Use `\sfdefault` for the default sans-serif font, `\rmdefault` for the default roman font, and likewise for any TeX font name. The general syntax is

```
\renewcommand{\familydefault}{<fontfamily>}
% \nopagenumbers{}
```

Uncommenting `%\nopagenumbers{}` suppresses automatic page numbering for CVs longer than one page.

Adjusting input encoding

If you are not using `xelatex` or `lualatex`, which both use `utf8` encoding by default, uncomment `\usepackage[utf8]{inputenc}` and change the encoding as needed.

```
% \usepackage[utf8]{inputenc}
% \usepackage{CJKutf8}  % for CVs in Chinese, Japanese or Korean
```

2.1.1 Language-specific setup

The babel package can be loaded in the preamble of your CV.

2.2 Personal data

Edit the personal data section to reflect your personal information. This data will be inserted in the header of the first page of the CV and/or in the footer of every page. This data will also appear on the cover letter. The default template settings are

```
\name{John}{Doe}
\title{Résumé title}
\born{4 July 1776}
\address{street and number}{postcode city}{country}
\phone[mobile]{+1~(234)~567~890}
\phone[fixed]{+2~(345)~678~901}
\phone[fax]{+3~(456)~789~012}
\email{john@doe.org}
\homepage{www.johndoe.com}

\social[linkedin]{john.doe}
\social[xing]{john\_doe}
\social[github]{jdoe}
\social[gitlab]{jdoe}
\social[codeberg]{jdoe}
\social[bitbucket]{jdoe}
\social[stackoverflow]{0000000/johndoe}
\social[skype]{jdoe}
\social[orcid]{0000-0000-000-000}
\social[researchgate]{jdoe}
\social[researcherid]{jdoe}
\social[googlescholar]{googlescholarid}
\social[twitter]{ji\_doe}
\social[mastodon]{mastodon.social/web/@user}
\social[telegram]{jdoe}
\social[whatsapp]{12345678901}
\social[signal]{12345678901}
\social[matrix]{@johndoe:matrix.org}
\social[discord]{jdoe\#0000}
\social[youtube]{c/jdoeschannel}
\social[youtube]{channel/XXXXXX}
\social[youtube]{user/jdoe}
\social[twitch]{jdoe}
\social[tiktok]{jdoe}
\social[instagram]{jdoe}
\social[soundcloud]{jdoe}
\social[steam]{jdoe}
\social[xbox]{jdoe}
\social[playstation]{jdoe}
\social[battlenet]{jdoe\#0000}

\extrainfo{additional information}
\photo[64pt][0.4pt]{picture}
\quote{Some quote}
```

Most of these commands are optional and can be commented out if they are not needed. The commands are pretty self-explanatory. Try out what you like and see what you need.

[**TODO:** explain adding pictures]

[**TODO:** Add note about how to cope with long names and long URLs. Is this handled correctly?]

[**TODO:** explain the second optional argument of `\social` command]

Bibliography.   In case BibTeX is used, the bibliography settings are adjusted in the lines

```
% to show numerical labels in the bibliography (default is to show
    no labels)
% \renewcommand*{\bibliographyitemlabel}{[\arabic{enumiv}]}
% \renewcommand{\refname}{Articles}

% bibliography with mutiple entries
% \usepackage{multibib}
% \newcites{book, misc}{{Books}, {Others}}
```

By default, no labels are shown for bibliography entries. Uncommenting the line `%\renewcommand*{\bibliographyitemlabel}{[\arabic{enumiv}]}` allows one to fine-tune the labels. Uncommenting the line `%\renewcommand{\refname}{Articles}` allows one to redefine the bibliography heading string "Publications" that is shown by default. Finally, adjustments using the `multibib` package can be done in the last two lines shown here.

Note.   BibLaTeX is currently not supported.

2.3   Modifying CV content

2.3.1   Structuring the CV

As with any other document style, the CV can be structured into sections and subsections using `\section` and `\subsection`.

2.3.2   `moderncv` macros

The `moderncv` package provides several macros to add content to your CV. The easiest way to understand their intended use is to have a look at how they are used in the template. Nonetheless, we list the macros here along with a short description of their intended use.

`\cvitem`.   Simple entry taking two arguments, a descriptor and a body. Flexible command that can be used to list job experiences and similar. Usage:

```
\cvitem{<descriptor>}{<body>}
```

`\cvdoubleitem`.   Two-column version of `\cvitem`. Takes four arguments. It is intended to enter skills such as computer skills or language skills in a two-column fashion. Usage:

```
\cvdoubleitem{<category_1>}{<descriptor_1>}{<category_2>}{<
    descriptor_2>}
```

`\cvitemwithcomment`.   Extends `\cvitem` with an additional argument for a comment. It is intended to enter skills such as computer skills or language skills. Usage:

```
\cvitemwithcomment{<descriptor>}{<skill_level>}{<comment>}
```

\cventry. Command taking six arguments intended to enter education or job experience. Arguments 3 to 6 can be left empty. In case longer descriptions in argument 6 are not broken properly, a minipage can be used. Alternatively, \newline{} can be used to break lines. Usage:

```
\cventry{<year--year>}{<degree>}{<institution>}{<city>}{<grade>}{<
    description>}
\cventry{<year--year>}{<job_title>}{<employer>}{<city>}{}{<line_1>\
    newline{}<line_2>}
```

\cvlistitem. Command taking one argument intended to enter a bullet list item. Very long lines get broken. Usage:

```
\cvlistitem{<item>}
```

\cvlistdoubleitem. Command taking two argument intended typeset a bullet list in two columns. Usage:

```
\cvlistdoubleitem{<item_1>}{item_2>}
```

\cvcolumns. Environment to typeset multicolumn \cvitems. This can be combined with the `itemize` environment. The multicolumn environment is added with

```
\begin{cvcolumns}
\end{cvcolumns}
```

Each column can be added with the \cvcolumn[<width>]{<content>} command, where <width> is a number between 0 and 1 controling the width of the column. Usage:

```
\begin{cvcolumns}
  \cvcolumn{<category_1>}{<content>}
  \cvcolumn{<category_2>}{<content>}
  \cvcolumn[0.5]{<content>}
\end{cvcolumns}
```

Skill matrix. The skill matrix is a table intended to display skills such as computer skills or project management skills graphically on a scale of 1 to 5. The skill matrix table consists of several elements:

- the graphical representation of the skill on a scale from 1 to 5,
- the legend to explain the meaning of the scale,
- a header line to explain the meaning of the table columns and
- the actual skill entries.

Skill representation. The graphical representation of skill can be entered with the command

```
\cvskill{<1-5>}
```

It can be used outside of the skill matrix, too.

Legend. The standard legend can be created by the command \cvskilllegend:

```
\cvskilllegend
\cvskilllegend*[<post_padding>]{<descriptor>}
```

\cvskilllegend with no arguments inserts the legend with no descriptor in its standard form without any lines. The asterisk toggles the inclusion of a dashed line. The optional argument <post_padding> allows one to adjust the post-padding of the legend. <post_padding> needs to be a valid length like 1em or 1ex.

The most general form of the skill legend command can be used to translate the legend descriptions into other languages as well as add a name descriptor:

```
\cvskilllegend[*][<post_padding>][<first_level>][<second_level>][<
    third_level>][<fourth_level>][<fifth_level>]{<name>}
% example: German translation
\cvskillplainlegend[0.2em][Grundkenntnisse][Grundkenntnisse und
    eigene Erfahrung in Projekten][Umfangreiche Erfahrung in
    Projekten][Vertiefte Expertenkenntnisse][Experte/Guru]{Legende}
```

An alternative legend style with the first three skill levels in one column is provided by

```
\cvskillplainlegend[*][<post_padding>][<first_level>][<second_level
    >][<third_level>][<fourth_level>][<fifth_level>]{<name>}
```

Header line. The command \cvskillhead adds a header line:

```
\cvskillhead[-0.1em]  % standard legend in english, adjust padding
% example german translation
\cvskillhead[0.25em][Level][F\"ahigkeit][Jahre][Bemerkung]
% general form
\cvskillhead[<post_padding>][<Level>][<Skill>][<Years>][<Comment>]
```

Skill matrix entry. The command \cvskillentry adds a skill matrix entry:

```
% general form
\cvskillentry[*][<post_padding>]{<skill_cathegory>}{<0-5>}{<skill_
    name>}{<years_of_experience>}{<comment>}
% Example usages:
\cvskillentry*{Language:}{3}{Python}{2}{I'm so experienced in
    Python and have realised a million projects. At least.}
\cvskillentry{}{2}{Lilypond}{14}{So much sheet music! Man, I'm the
    best!}
```

The asterisk toggles the inclusion of a dashed line. Some length adjustments can be made to the skill matrix and how to do so will be explained in section 3.4.1.

2.4 Letter of motivation

To add a subject to the letter of motivation or to close with your signature, see sections 3.6.2 and 3.6.1, respectively.

[**TODO:** add short explanation of motivation letter.]

3 Customization

3.1 Styles and their options

Each style allows fine-tuning through passing options to the `\moderncvstyle` command. The general syntax

```
\moderncvstyle[<option1>, <option2>, ...]{<style>}
```

for passing options follows the usual LATEX scheme. Each style defines their own options, and not all options are available for each style. Below is a list of all the options available:

casual. This style allows the following options which *only* affect header and footer styles:

head alignment: values: `left`, `right` (default). Sets the alignment of the title and the picture if one is included.

name: values: `alternate`. Displays the name in all lowercase. Differentiation of the name is done by color (disabled by default). This feature is discouraged for longer names.

data in head: values: `details`, `nodetails` (default). Toggles between the header and footer as the location of personal data on the page.

symbols: values: `symbols` (default), `nosymbols`. Toggles between inclusion of icons or text-based abbreviations for personal data.

classic. This style allows the following options which *only* affect header and footer styles:

alignment: values: `left` (default), `right`. Sets the alignment of the address block and the picture.

data in head: values: `details`, `nodetails` (default). Toggles between the header and footer as the location of personal data on the page.

symbols: values: `symbols` (default), `nosymbols`. Toggles between inclusion of icons or text-based abbreviations for personal data.

banking. This style allows the following options:

alignment (body): values: `left` (default), `center`, `right`. Sets the alignment of the entries in the style.

rule style: values: `fullrules`, `shortrules`, `mixedrules` (default), `norules`. Adjusts the rules used in the style.

data in head: values: `details`, `nodetails` (default). Toggles between the header and footer as the location of personal data on the page.

symbols: values: `symbols` (default), `nosymbols`. Toggles between inclusion of icons or text-based abbreviations for personal data.

oldstyle. This style allows the following options:

data in head: values: `details`, `nodetails` (default). Toggles between the header and footer as the location of personal data on the page.

symbols: values: `symbols` (default), `nosymbols`. Toggles between inclusion of icons or text-based abbreviations for personal data.

fancy.   This style allows the following options:

data in head: values: `details`, `nodetails` (default). Toggles between the header and footer as the location of personal data on the page.

symbols: values: `symbols` (default), `nosymbols`. Toggles between inclusion of icons or text-based abbreviations for personal data.

Note.   Only one option from each option category can be passed in at a time, e.g.

```
\moderncvstyle[left, nosymbols]{casual}
```

3.2   Adjusting colors

The colors of each style can be adjusted.

Note.   The color theme must be loaded *before* \moderncvstyle, i.e.

```
\moderncvcolor{blue}
\moderncvstyle{casual}
```

Base colors.   Each style defines three main colors: `color0`, `color1` and `color2`. `color0` is black and the main text color. `color1` is the main theme color, like blue, green, etc. `color2` is a some form of grey used for the user data, etc. These colors can be redefined by using, e.g.

```
\definecolor{color1}{rgb}{0.55, 0.55, 0.55} % dark grey
\colorlet{color1}{black}
```

Any mechanism for naming and defining colors used by the xcolor package can be used to redefine the colors of a **moderncv** style.

Fine tuning.   If an even finer control over the color scheme of the style is desired, the following colors are being used internally and can be redefined at will:

```
% head and footer
\colorlet{lastnamecolor}{color1}
\colorlet{namecolor}{lastnamecolor}
\colorlet{headrulecolor}{color1}
\colorlet{firstnamecolor}{lastnamecolor!50}
\colorlet{titlecolor}{color2}
\colorlet{addresscolor}{color2}
\colorlet{quotecolor}{color1}
\colorlet{pictureframecolor}{color1}
% body
\colorlet{bodyrulecolor}{color1}
\colorlet{sectioncolor}{color1}
\colorlet{subsectioncolor}{color1}
\colorlet{hintstylecolor}{color0}
% letter
\colorlet{letterclosingcolor}{color2}
% skill matrix
\colorlet{skillmatrixfullcolor}{color1}
\colorlet{skillmatrixemptycolor}{color2!30}
```

3.3 Modifying symbols and icons

3.3.1 Icons

As stated in section 3.1, the use of icons is toggled by the `symbols` option that can be passed to `\moderncvstyle`.

The icons used in the display of the personal data (phone numbers, email, fax, social media accounts, etc.) can be customized by redefining the internal commands for the symbols:

```
\renewcommand*{<\symbolcommand>}{{\small<\symbol>}~}
```

Using `\small` is optional, but the default behavior is to render all icons using `\small`. Use `\small` if one merely wishes to replace an icon/symbol while keeping the size consistent with the default icons/symbols. The tilde ensures proper spacing after the symbols and is recommended as well.

Currently **moderncv** supports the following commands as <`\symbolcommand`>:

- `\addresssymbol`
- `\mobilephonesymbol`
- `\fixedphonesymbol`
- `\faxphonesymbol`
- `\emailsymbol`
- `\homepagesymbol`
- `\linkedinsocialsymbol`
- `\xingsocialsymbol`
- `\twittersocialsymbol`
- `\githubsocialsymbol`
- `\gitlabsocialsymbol`
- `\stackoverflowsocialsymbol`

- `\googlescholarsocialsymbol`
- `\telegramsocialsymbol`
- `\whatsappsocialsymbol`
- `\signalsocialsymbol`
- `\matrixsocialsymbol`
- `\orcidsocialsymbol`
- `\researchgatesocialsymbol`
- `\researcheridsocialsymbol`
- `\bitbucketsocialsymbol`
- `\skypesocialsymbol`
- `\bornsymbol`

The possible options for <`\symbol`> depend on the package that is used. By default, the `marvosym` package is loaded if `pdflatex` is used, and the `academicons` and `fontawesome5` packages are loaded if either `lualatex` or `xelatex` is used. Full lists of all available symbols and icons can be found in the documentation of each respective package:

https://ctan.org/pkg/marvosym

https://ctan.org/pkg/fontawesome5

https://ctan.org/pkg/academicons

Example. If one wanted to use the dingbat fonts to replace the default phone symbol, one should load the `pifont` package in the preamble and then substitute the default symbol with the dingbat symbol ✆ with

```
\renewcommand*{\fixedphonesymbol}{\ding{38}~}
```

3.3.2 Listing labels

The labels used in `itemize` environments, `cvlistitem` and `cvlistdoubleitem` can be changed in two different ways:

- Redefining the internal commands \labelitemi, \labelitemii, \labelitemiii and \labelitemiv changes the labels for `itemize` environments as well as for `cvlistitem` and `cvlistdoubleitem`, e.g.

    `\renewcommand{\labelitemi}{-}`

- Redefining \listitemsymbol changes the labels for `cvlistitem` and `cvlistdoubleitem` but *not* for `itemize` environments, e.g.

    `\renewcommand{\listitemsymbol}{-}`

3.4 Adjusting lengths

Some lengths in **moderncv** can be adjusted.

The hints column can be adjusted with

`\setlength{\hintscolumnwidth}{3cm}`

For the `classic` style, the width of the space for the name can be adjusted to avoid breaks:

`\setlength{\makecvheadnamewidth}{10cm}`

One should be careful though, as the length is normally calculated to avoid any overlap with the personal information. This should be used at one's own typographical risk.

[**TODO:** Add more adjustable lengths]

3.4.1 Lengths in the skillmatrix

Both the width of the skill matrix legend and the width of the skill matrix columns can be adjusted.

The width of the skill matrix legend can be adjusted as follows:

```
\setcvskillllegendcolumns[<width>][<factor>]
%% Examples:
\setcvskillllegendcolumns[][0.45]
\setcvskillllegendcolumns[\widthof{``Legend''}][0.45]
\setcvskillllegendcolumns[0ex][0.46] % useful for the banking style
```

<width> should be a length smaller than \textwidth, and <factor> must be between 0 and 1.

The width of the skill matrix columns can be adjusted as follows:

```
\setcvskillcolumns[<width>][<factor>][<exp_width>]
%% Examples:
\setcvskillcolumns[5em][][]   % adjust first column. Same as \
   setcvskillcolumns[5em]
\setcvskillcolumns[][0.45][]  % adjust third (skill) column. Same
   as \setcvskillcolumns[][0.45]
\setcvskillcolumns[][][\widthof{``Year''}]  % adjust fourth (years)
    column.
\setcvskillcolumns[][0.45][\widthof{``Year''}]
\setcvskillcolumns[\widthof{``Language''}][0.48][]
\setcvskillcolumns[\widthof{``Language''}]
```

<width> and <exp_width> should be lengths smaller than \textwidth, and <factor> must be between 0 and 1.

3.5 Page breaks and orphaned section headers

If LATEX breaks pages just after \section or \subsection commands, try adjusting the stretchability of the page with \cvsectionstretchability or \cvsubsectionstretchability, e.g.

```
\setlength{\cvsectionstretchability}{\baselineskip}
\setlength{\cvsubsectionstretchability}{100pt}
```

These two lengths tell LATEX how much extra length it needs after \section and \subsection commands. By default, **moderncv** sets both lengths to 0.9\baselineskip.

This should solve orphaned \section and \subsection commands that are used alone for most users. However, LATEX does not check for content. For example, writing

```
\section{blub}
\subsection{blubblub}
```

one after the other may cause LATEX to place the section and subsection headers on separate pages. Since LATEX considers the subsection header to not be orphaned, it may place the section header at the bottom of a page if there is enough space to do so while placing the subsection header on the next page. One solution is to increase \cvsectionstretchability to force the break of the section header. However, this changes the behaviour for all \section commands in your CV and might cause unnecessary page breaks. It is therefore recommended to force the page break manually with a \newpage in this case.

Experts only: Internally, **moderncv** uses a custom \needspace command:

```
\NewDocumentCommand\@cvneedspace{m}{%
  \begingroup
    \setlength{\dimen@}{#1}%
    \vskip\z@\@plus\dimen@
    \penalty \withinstretchpenalty\vskip\z@\@plus -\dimen@
    \vskip\dimen@
    \penalty \poststretchpenalty%
    \vskip -\dimen@
    \vskip\z@skip % hide the previous |\vskip| from |\addvspace|
  \endgroup
}
```

Thus, instead of setting \cvsectionstretchability and/or \cvsubsectionstretchability, page break behavior can be adjusted by redefining the following internal penalties:

```
\renewcommand{\withinstretchpenalty}{<-100...9999>}
\renewcommand{\poststretchpenalty}{<-100...9999>}.
```

By default, **moderncv** sets \withinstretchpenalty to 0 and \poststretchpenalty to 9999. The higher the penalties are, the less likely a page break will occur. A good explanation of \needspace can be found at https://tex.stackexchange.com/questions/348994/understanding-needspace.

3.6 Tips and Tricks

3.6.1 Including a scanned signature in the letter of motivation

To add a scanned signature to your letter of motivation, add the following to your preamble:

```latex
\makeatletter
\renewcommand*{\makeletterclosing}{
  \@closing\\[3em]%
  \includegraphics[height=1.5cm, width=5.5cm]{<signature.png>}
  % \textbf{\@firstname~\@lastname}%
  \ifthenelse{\isundefined{\@enclosure}}{}{%
    \\%
    \vfill%
    \textcolor{color2}{\textit{\enclname: \@enclosure}}%
  }%
}
\makeatother
```

3.6.2 Including a subject in the letter of motivation

To add a subject to your letter of motivation, add the following to your preamble:

```latex
\makeatletter
\renewcommand*{\makeletterhead}{%
  \recomputeletterlengths   % in case we are switching from letter
      to resume, or vice versa
  % recipient block
  \begin{minipage}[t]{0.5\textwidth}
    \raggedright\addressfont%
    \textbf{\textup{\@recipientname}}\\%
    \@recipientaddress%
  \end{minipage}
  % date
  \hfill  % US style
  % \\[1em] % UK style
  \@date\\[4em]    % US informal style: "January 1, 1900"; UK formal
      style: "01/01/1900"
  % opening
  \raggedright%
  \textbf{\subject}\\[2em]
  \@opening\\[1.5em]%
  % ensure no extra spacing after \makelettertitle due to a
      possible blank line
  % \ignorespacesafterend   % not working
  \hspace{0pt}\par\vspace{-\baselineskip}\vspace{-\parskip}
}
\makeatother
```

Then a subject can be added to the letter of motivation with

```latex
\subject{<subject_text>}
```

3.6.3 Legal disclaimer at the end of the CV

Some countries (e.g. Italy) require you to add a legal disclaimer authorizing the use of the personal data in your CV. To add such a disclaimer, add the following to the bottom of your CV:[1]

```latex
\vfill
\begin{center}
\textit{\small Ai sensi del D. Lgs. 196/2003 ...}
\end{center}
```

---

[1]Example provided by Cristina Sambo

4 Implementation details

4.1 Creating your own styles

[**TODO:** Add explanation on how to create styles and and how to recombine headers, footers, bodies etc.]

4.2 Required packages

In addition to the packages that `moderncv` itself provides, the following packages are loaded internally:

- etoolbox
- ifthen
- xcolor
- ifxetex or ifluatex
- fontenc
- url
- hyperref
- graphicx
- fancyhdr
- tweaklist[2]
- calc
- xparse

- microtype
- expl3
- tikz
- changepage
- fontawesome5
- academicons
- tgpagella
- ebgaramond
- kurier
- multirow
- arydshln

Most of these packages should be included in your LATEX distribution of choice.

4.3 Known conflicts with other packages

1. `moderncv` is incompatible with `biber`.
2. `moderncv` is incompatible with BibLaTeX.

4.4 Known bugs

1. Skill matrices don't break automatically in `fancy` style.
2. Long names break the `oldstyle` style and possibly other styles (needs testing).
3. Long URLs in `classic` style can make the name break line. Fixed width for the address part must be implemented.
4. When using the `fancy` style, undesired space is added between the bibliography head and the first entry, as well as after the last entry.
5. Footnotes generate errors, but the output seems correct when running with `-interaction=nonstopmode`.

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[2]The `tweaklist` package has been altered for the development of `moderncv` and ships with `moderncv`.

6. When using CJK, the last `\clearpage` required for `fancyhdr` to work properly kills the "lastpage" counter, hence also the page numbering.

7. `moderncv` produces the error "`lonely \item--perhaps a missing list environment`" when used with bibentry, through the output is actually correct. Among other things, this causes compilation by LyX to stop.

8. The space after a `\cventry` gets eaten up when the last argument contains a nested itemize environment. An ugly hack and incomplete solution was implemented by including a `\strut` in every item label, but this doesn't solve the problem for multi-line items. Ideally, the strut should end the item, but there seems to be no way to do this.