Machine Learning

LaTeX Template

Documentation 1.1

Teddy van Jerry *Instructor: TeX - LaTeX Stack Exchange*

§ Template Documentation §

Section 1: Basic Information of This Template Class

Despite this *SEU-ML-Assign* class is dedicated to Southeast University as the Machine Learning assignment LaTeX template both for teachers and students, it can also be used for other schools. In the near future, it will eventually become an elegant template for all assignment requirememts.

Package Class Name	`seu-ml-assign`
Version	1.1 (2022/03/28)
Description	LaTeX Template for Southeast University Machine Learning Assignment
Author	Teddy van Jerry (Wuqiong Zhao)
Maintainer	Teddy van Jerry (Wuqiong Zhao)
GitHub Repository	https://tvj.one/ml-tex
Issues	https://tvj.one/ml-tex/issues
CTAN Package	https://www.ctan.org/pkg/seu-ml-assign
Information Page	https://seu-ml-assign.github.io
Open Source License	MIT License (https://tvj.one/ml-tex/blob/master/LICENSE)

You can contact me at me@tvj.one for support.

Section 2: Class Options

To use this template, put `seu-ml-assign.cls` file under the same directory with your main `tex` file.

```
\documentclass{seu-ml-assign} % SEU Machine Learning Assignment Template
```

The page size is A4 paper. There are 8 supported options:

Option	Description	Default
`solution`	Write solutions (for students).	•
`problem`	Write problem sets (for instructors).	
`oneside`	One-sided document.	•
`twoside`	Two-sided document.	
`9pt`	Set font size as 9 points.	
`10pt`	Set font size as 10 points.	•
`11pt`	Set font size as 11 points.	
`12pt`	Set font size as 12 points.	

For example, a 10pt, two-sided document for instructors to create an assignment consisting of problem sets should use

```
\documentclass[10pt,twoside,problem]{seu-ml-assign} % The 10pt option can be omitted.
```

With the `twoside` option, the header will switch style every page, as is the case in this documentation. In contrast, the sample file uses the `oneside` option.

There are several differences between the `solution` mode and `problem` mode, including the preset texts on the document (for example the student name is not shown in the `problem` mode) and some properties can only be used with the `problem` mode which will be elaborated on in §3.2.

Section 3: Document Properties

(1) Fields There are several fields to set. The `\mainproblem{}` can be left empty. Consider the following example used in the sample file:

```
\title{Assignment}                          % Document Type: assignment, quiz, etc.
\author{Teddy van Jerry}                    % Your Name
\studentID{61520522}                        % Your Student ID
\instructor{TeX - LaTeX Stack Exchange}     % The Name of Your Instructor
\date{\today}                               % The Submission or Release Date
\duedate{20:00 March 21, 2022}              % The Time the Assignment is Due
\assignno{1}                                % Assignment Number
\semester{SEU --- 2022 Spring}              % Semester
\mainproblem{Linear Algreba}                % The Main Problem or Topic
```

With these fields set, you can use the command `\maketitle` to print the title. At the same time, the metadata for the PDF document is automatically set.

(2) Problem Mode Only Properties One of the fields `\author{}` and `\instructor{}` can be omitted or set as empty provided that they are the same.

Section 4: Section Title (Problem) Settings

(1) Normal Title The title of a problem can be set as `\problem{This is a Section Title}` or uses a lower level command `\section{This is a Section Title}`. There are two slight different between these two ways.

- The name in the table of contents (ToC) using `\problem{}` will add the section/problem number before the section/problem title name.
- The optional argument of `\section{}` will set the name in the ToC which is by default in LaTeX in the format of `\section[<ToC Name>]{<Section Title Name>}`. By contrast, the optional argument in `\problem{}` sets the problem points as is detailed in §4.3.

`\section[\thesection~<Title>]{<Title>}` is equivalent to `\problem{<Title>}` or `\problem[]{<Title>}`.

(2) Unnumbered Title Use the `\section*{}` or `\problem*{}` to get an unnumbered section.

This is an Unnumbered Problem

This title will also not appear in the ToC or bookmarks of the PDF.

(3) Problem with Points The points of a problem can be set using command `\problempts{xxx}` before calling the `\section{}` command. These two commands can be simplified to `\problem[xxx]{}`. For example, using the command `\problem[15]{This is a Problem Worth 15 Points}` will have:[1]

Problem 1: This is a Problem Worth 15 Points (15 points)

Note that if the point is an empty string, the point information will not be shown.

[1] This title is actually faked in this documentation because I do not want the ToC of this documentation contaminated. But it will look the same.

(4) Long Title Compatibility There is also no problem if the section title is too long.[2]

Problem 2: I Don't Think that Anyone Will Enjoy Themselves Seeing a Very Very Long Problem That is Worth Twenty Points in this Machine Learning Course (20 points)

(5) Section Title Name The name of the section (default name as `problem`) can be changed by using `\renewcommand{\sectionheadname}{Name}`.

(6) Section Number The number of the section can be changed, for example `\texttt{\setproblem{4}}` will make the next section number be `5`. For experienced LaTeX users to understand, this command actually change the section counter.

(7) Solution Declaration You can use `\startsolution` to declare you start writing the solution. This will reset the section number and it is especially useful when your document contains problems and solutions as two separate parts. There is an option `print` and if you use `\startsolution[print]` you will get:

Solution

and the word Solution can be changed using command `\renewcommand{\solutionname}{Other Name}`.

Section 5: Subsection Title (Sub Problem) Settings

(1) Normal Title This is a normal title using command `\subproblem{Normal Title}` or alternatively the command `\subsection{Normal Title}`. There is a slight difference between these two commands which is similar to the case stated in §4.1. The command `\subproblem{}` adds the sub problem number in ToC and bookmarks. `\subsection[(\arbic{subsection}) <Title>]{<Title>}` is equivalent to `\subproblem{<Title>}`.

(2) Use `\subproblem{}` or `\subsection{}` if only the sub problem number is required (like this line).

(3) Subsection Number Similar to `\setproblem{}`, there is also `\setsubproblem{}`.

(4) Subsubsection (Sub Sub Problem) For completeness, `\subsubsection{}` and `\subsubproblem{}` are provided. One example is §6.5.1, where `\subsubsection[\arbic{subsubsection}. <Title>]{<Title>}` is equivalent to `\subsubproblem{<Title>}`.

Section 6: Other Tools

(1) Equation Numbering The equation number is within the section (problem), for example

$$\det(\mathbf{A}) = 1 \times \begin{vmatrix} -5 & 3 \\ -6 & 4 \end{vmatrix} - (-3) \times \begin{vmatrix} 3 & 3 \\ 6 & 4 \end{vmatrix} + 3 \times \begin{vmatrix} 3 & -5 \\ 6 & -6 \end{vmatrix} = 1 \times (-2) + 3 \times (-6) + 3 \times 12 = 16, \tag{6.1}$$

which uses the `equation` environment and can be referenced using the command `\eqref{eq:xxx}` with a corresponding `\label{eq:xxx}` in Eq. (6.1).

(2) Maths Packages Maths Package `mathtools`, `amssymb`, `amsthm`, `bm` and `nicematrix` are automatically loaded. The `nicematrix` package is especially powerful in terms of writing a matrix. You can find its documentation at https://ctan.org/pkg/nicematrix. It is worth noting that `nccmath` can lead to potential subsection (sub problem) title indentation problem and therefore should not be loaded.

[2] This title is also faked.

(3) Theorem Environment Environments `theorem`, `proposition`, `lemma`, `corollary` have been defined. For example:

Lemma 6.1. *This is a lemma. Its numbering is within the section. You can create such environment using the code* `\begin{lemma} Your lemma contents here. \end{lemma}`.

(4) Additional Math Operator The additional math operator is listed in the table below.

Command	Definition	Inline Example
`\argmin`	`\DeclareMathOperator*{\argmin}{\arg\min}`	$\arg\min_x (x-2)^2+1$
`\argmax`	`\DeclareMathOperator*{\argmax}{\arg\max}`	$\arg\max_{\mathbf{x}} f(\mathbf{x})$

Operators defined with the `*` after `\DeclareMathOperator` have their subscript under the operator in the `equation` mode, which can be suppressed by adding `\nolimits` before the `_`.

Here is an example:

```
\begin{equation}
  \argmin_{x}(x-2)^2+1,\quad \argmax_{\mathbf{x}} f(\mathbf{x}),\quad
   ↪ \argmin\nolimits_{\alpha}g(\alpha)
\end{equation}
```

$$\arg\min_{x}(x-2)^2+1, \quad \arg\max_{\mathbf{x}} f(\mathbf{x}), \quad \arg\min_{\alpha} g(\alpha) \tag{6.2}$$

(5) Shortcuts Some shortcuts commands have been defined in this class.

1. Hint You can easily use command `\hint{}` to show a hint to a problem. This is especially useful in the `problem` mode. (*Hint: You can use* `\renewcommand{\hintstyle}{<Your Style>}` *to change the default one.*)

(6) Code Block You can use code blocks in this class which is implemented by the `lstlisting` environment. Their default styles have been set and you can make changes by passing optional arguments when using the environment. For more information, please refer to https://ctan.org/pkg/listings.

(7) Fancy Box A fancy box has been defined.

This is a Fancy Box

Lorem ipsum dolor sit amet, consectetur adipiscing elit. Proin viverra massa rutrum felis vulputate, ac faucibus velit accumsan. Vivamus aliquet felis nec interdum sollicitudin. Nullam ornare eu velit id cursus. Maecenas a sodales velit, vel cursus magna. Cras lobortis venenatis.

You can use the following code to generate it.

```
\begin{fancybox}{This is a Fancy Box}
  Lorem ipsum dolor sit amet, consectetur adipiscing elit. Proin viverra massa
   ↪ rutrum felis vulputate, ac faucibus velit accumsan. Vivamus aliquet felis nec
   ↪ interdum sollicitudin. Nullam ornare eu velit id cursus. Maecenas a sodales
   ↪ velit, vel cursus magna. Cras lobortis venenatis.
\end{fancybox}
```

There is also a `notice` box:

This is a Notice Box

Lorem ipsum dolor sit amet, consectetur adipiscing elit. Proin viverra massa rutrum felis vulputate, ac faucibus velit accumsan. Vivamus aliquet felis nec interdum sollicitudin. Nullam ornare eu velit id cursus. Maecenas a sodales velit, vel cursus magna. Cras lobortis venenatis.

You can use the following code to generate it.

```
\begin{notice}{This is a Notice Box}
  Lorem ipsum dolor sit amet, consectetur adipiscing elit. Proin viverra massa
    ↪ rutrum felis vulputate, ac faucibus velit accumsan. Vivamus aliquet felis nec
    ↪ interdum sollicitudin. Nullam ornare eu velit id cursus. Maecenas a sodales
    ↪ velit, vel cursus magna. Cras lobortis venenatis.
\end{notice}
```

Appendix A: Known Issues

- The section title background height may not be accurate;

If you find more issues, please report them on https://tvj.one/ml-tex/issues.

Appendix B: Change Log

v1.1 2022/03/28 – Bug Fix and Enhancement

1. Add `\mainproblem{}` command;
2. Add `\subsubproblem{}` command;
3. Add `\hint{}` shortcut;
4. Support for `\section*{}`, `\problem*{}`, `\subsection*{}` and `\subproblem*{}`;
5. Fix ToC/Bookmarks problem;
6. Set footnote line style;
7. Add the `twoside` option.

v1.0 2022/03/19 – Initial Version

1. Initial `cls` file in addition to a sample file and documentation;
2. Publish at GitHub and CTAN.

Appendix C: Source Code

The source code of `seu-ml-assign.cls` is listed below.

```
15 \NeedsTeXFormat{LaTeX2e}
16 \ProvidesClass{seu-ml-assign}[2022/03/28 SEU Machine Learning Assignment Template]
17
18 %% Class and Options
19 \def\@@ptsize{10pt} % font size
20 \DeclareOption{9pt}{\def\@@ptsize{9pt}}
21 \DeclareOption{10pt}{\def\@@ptsize{10pt}}
22 \DeclareOption{11pt}{\def\@@ptsize{11pt}}
23 \DeclareOption{12pt}{\def\@@ptsize{12pt}}
24 \def\@@solutionmode{1} % default as the solution mode
25 \DeclareOption{solution}{\def\@@solutionmode{1}} % solution mode
26 \DeclareOption{problem}{\def\@@solutionmode{0}} % problem mode
27 \def\@twoside{0} % default as oneside
28 \DeclareOption{oneside}{\def\@twoside{0}} % one-side document
29 \DeclareOption{twoside}{\def\@twoside{1}} % two-side document
30 \ProcessOptions\relax
31 \LoadClass[a4paper,onecolumn,\@@ptsize]{article}
32
33 %% Page Settings
34 \RequirePackage[inner=2.0cm,outer=2.0cm,top=1.2cm,bottom=3.5cm]{geometry}
35 \newcommand{\firstfooteradditionalheight}{2em} % additional height for footer on the
    ↪ first page
36 \hfuzz=.5em % disable false positive of overfull \hbox
37
38 %% Document Propertities
```

```
\global\let\@assignno\@empty
\global\let\@semester\@empty
\global\let\@studentID\@empty
\global\let\@instructor\@empty
\global\let\@duedate\@empty
\global\let\@author\@empty
\global\let\@mainproblem\@empty
\newcommand{\assignno}[1]{\gdef\@assignno{#1}} % Assignment Number
\newcommand{\semester}[1]{\gdef\@semester{#1}} % Semester
\newcommand{\studentID}[1]{\gdef\@studentID{#1}} % Student ID
\newcommand{\instructor}[1]{\gdef\@instructor{#1}} % Instructor
\newcommand{\duedate}[1]{\gdef\@duedate{#1}} % Due Date of the Assignment
\newcommand{\mainproblem}[1]{\gdef\@mainproblem{#1}} % The main problem of the
 ↪ assignment

%% Fonts and Colors
\RequirePackage[T1]{fontenc}
\RequirePackage[usenames,dvipsnames]{xcolor}

%% TikZ Rule
\RequirePackage{tikz}
\usetikzlibrary{fadings, calc}
\newcommand{\tikzrule}[3][]{\tikz{\fill[#1] (0,0) rectangle (#2,#3);}}

%% Sections Settings
\RequirePackage[explicit]{titlesec} % explained in
 ↪ https://tex.stackexchange.com/a/292307/234654
\RequirePackage{suffix}
% http://mirrors.ctan.org/macros/latex/contrib/titlesec/titlesec.pdf
\pgfdeclarelayer{background}
\pgfsetlayers{background,main}
\global\let\@problempts\@empty
\newcommand{\problempts}[1]{\gdef\@problempts{#1}} % Points of the Problem
\newcommand{\problemptsprint}{\ifx\@problempts\@empty\else(\@problempts~points)\fi}
\newcommand{\sectionheadname}{Problem} % Name for the Section (default as 'Problem')
% Reference: https://tex.stackexchange.com/a/12269/234654
\newcommand{\boxedsection}[4][blue!20]{{%
    \begin{tikzpicture}[inner sep=0pt, inner ysep=0.3ex]
        \node[anchor=base west] at (0,0) (counter) {#2};
        \path let \p1 = (counter.base east) in node[anchor=base west, text
         ↪ width={\textwidth-\x1-#4}] (content)
            at ($(counter.base east)+(#4,0)$) {#3};
        \begin{pgfonlayer}{background}
            \shade[left color=#1,right color=white] let \p1=(counter.north),
             ↪ \p2=(content.north) in
            (0,{max(\y1,\y2)}) rectangle (content.south east);
        \end{pgfonlayer}
    \end{tikzpicture}
}}
% For numbered section, i.e. \section{}
\titleformat{\section}% <command>
    {\Large\bfseries}% <format>
    {}% <label>
    {0pt}% <sep>
    {\boxedsection{\sectionheadname{} \thesection:}{#1}{0.33em}}% <before-code>
    [%
        \vspace{-2.2\baselineskip}\hfill{\normalfont\small\problemptsprint}%
        \problempts{}% clear the problem points
    ]% <after-code>
% For unnumbered section, i.e. \section*{}
\titleformat{name=\section,numberless}% <command>
    {\Large\bfseries}% <format>
    {}% <label>
    {0pt}% <sep>
```

```
    {\boxedsection{}{#1}{0em}}% <before-code>
    [%
        \vspace{-2.2\baselineskip}\hfill{\normalfont\small\problemptsprint}%
        \problempts{}% clear the problem points
    ]% <after-code>
\newcommand{\setproblem}[1]{\ifx#1\@empty\else\setcounter{section}{#1}\fi} % force the number of problem
\newcommand{\setsubproblem}[1]{\ifx#1\@empty\else\setcounter{subsection}{#1}\fi} % force the number of subproblem
\newcommand{\problem}[2][]{\problempts{#1}\section[\thesection~#2]{#2}}%
\WithSuffix\newcommand\problem*[2][]{\problempts{#1}\section*{#2}}%
\newcommand{\solutionname}{Solution}%
\newcommand{\startsolution}[1][print]{%
    \setproblem{0}% reset the section counter
    \def\startsolutionprintoption{print}
    \def\startsolutionprintuseroption{#1}
    \ifx\startsolutionprintuseroption\startsolutionprintoption{%
        {%
            \fontfamily{LinuxLibertineT-OsF}\selectfont% select font as Linux Libertine
            \centering\LARGE\scshape%
            \vspace{\baselineskip}%
            \solutionname{}\\[-0.2em]%
        }%
        \noindent%
        \tikzrule[WildStrawberry, path fading=west]{.5\textwidth}{.2em}%
        \tikzrule[WildStrawberry, path fading=east]{.5\textwidth}{.2em}%
    }\fi%
}
\titlespacing*{\section}{0em}{2.5\baselineskip}{1\baselineskip}
\titleformat{\subsection}[runin]{\large\bfseries}{(\arabic{subsection})}{0.33em}{#1}
\newcommand{\subproblem}[1]{\subsection[(\arabic{subsection}) #1]{#1}}
\WithSuffix\newcommand\subproblem*[1]{\subsection*{#1}}
\titleformat{\subsubsection}[runin]{\bfseries}{\arabic{subsubsection}.}{0.33em}{#1}
\newcommand{\subsubproblem}[1]{\subsubsection[\arabic{subsubsection}. #1]{#1}}
\WithSuffix\newcommand\subsubproblem*[1]{\subsubsection*{#1}}

%% Maths Settings
\RequirePackage{mathtools}
\RequirePackage{amssymb}
\RequirePackage{amsthm} % proof environment and others
\RequirePackage{bm} % \bm command
\RequirePackage{nicematrix}
\numberwithin{equation}{section}
\newtheorem{theorem}{Theorem}[section]
\newtheorem{proposition}{Proposition}[section]
\newtheorem{lemma}{Lemma}[section]
\newtheorem{corollary}{Corollary}[section]
\newcommand{\hintstyle}{\itshape}
\newcommand{\hint}[1]{({\hintstyle Hint: #1})}
\DeclareMathOperator*{\argmin}{\arg\min}
\DeclareMathOperator*{\argmax}{\arg\max}

%% Code Block Settings
\RequirePackage{listings}
\definecolor{dkgreen}{rgb}{0,0.5,0}
\definecolor{gray}{rgb}{0.5,0.5,0.5}
\definecolor{mauve}{rgb}{0.58,0,0.82}
\lstset{
    numbers=left,
    frame=tb,
    aboveskip=3mm,
    belowskip=3mm,
    showstringspaces=false,
```

```
    columns=fixed,
    framerule=1pt,
    rulecolor=\color{gray!35},
    backgroundcolor=\color{gray!5},
    basicstyle={\ttfamily\small},
    numberstyle=\footnotesize\color{gray},
    keywordstyle=\bfseries\color{MidnightBlue!95!black},
    commentstyle=\color{dkgreen},
    stringstyle=\color{mauve},
    breaklines=true,
    breakatwhitespace=true,
    tabsize=2,
    extendedchars=false,
    postbreak=\mbox{\hspace{-1.4em}\textcolor{purple}{$\hookrightarrow$}\space}
}

%% Captions Settings
\RequirePackage[font=footnotesize,labelfont=bf]{caption}

%% Color Boxes
\RequirePackage[many]{tcolorbox}
\RequirePackage{varwidth}
\newtcolorbox{fancybox}[2][]{enhanced,skin=enhancedlast jigsaw,
    attach boxed title to top left={xshift=-4mm,yshift=-0.5mm},
    fonttitle=\bfseries\sffamily,varwidth boxed title=0.7\linewidth,
    colbacktitle=blue!45!white,colframe=red!50!black,
    interior style={top color=blue!10!white,bottom color=red!10!white},
    boxed title style={empty,arc=0pt,outer arc=0pt,boxrule=0pt},
    underlay boxed title={
        \fill[blue!45!white] (title.north west) -- (title.north east)
        -- +(\tcboxedtitleheight-1mm,-\tcboxedtitleheight+1mm)
        -- ([xshift=4mm,yshift=0.5mm]frame.north east) -- +(0mm,-1mm)
        -- (title.south west) -- cycle;
        \fill[blue!45!white!50!black] ([yshift=-0.5mm]frame.north west)
        -- +(-0.4,0) -- +(0,-0.3) -- cycle;
        \fill[blue!45!white!50!black] ([yshift=-0.5mm]frame.north east)
        -- +(0,-0.3) -- +(0.4,0) -- cycle; },
    title={#2},#1
}
\newtcolorbox{notice}[2][]{enhanced,
    colframe=blue!50!black,colback=blue!10!white,colbacktitle=blue!5!yellow!10!white,
    fonttitle=\bfseries,coltitle=black,attach boxed title to top center=
    {yshift=-0.25mm-\tcboxedtitleheight/2,yshifttext=2mm-\tcboxedtitleheight/2},
    boxed title style={boxrule=0.5mm,
    frame code={ \path[tcb fill frame] ([xshift=-4mm]frame.west)
    -- (frame.north west) -- (frame.north east) -- ([xshift=4mm]frame.east)
    -- (frame.south east) -- (frame.south west) -- cycle; },
    interior code={ \path[tcb fill interior] ([xshift=-2mm]interior.west)
    -- (interior.north west) -- (interior.north east)
    -- ([xshift=2mm]interior.east) -- (interior.south east) -- (interior.south west)
    -- cycle;} },
    title={#2},#1
}

%% Footnote Settings
\RequirePackage[bottom]{footmisc} % glue footnote to bottom
\renewcommand{\footnoterule}{\noindent\tikzrule[SeaGreen, path
 ↪ fading=east]{.4\textwidth}{.1em}}
\renewcommand{\footnotesep}{1em}

%% Header and Footer
\RequirePackage{fancyhdr}
\RequirePackage[colorlinks=true, urlcolor=blue, linkcolor=purple, citecolor=red,
 ↪ hypertexnames=false]{hyperref}
```

```
\setlength{\headheight}{52pt}
\setlength{\marginparwidth}{2cm}
\pagestyle{fancy}
\if\@twoside0
    \lhead{
        \fontfamily{LinuxLibertineT-OsF}\selectfont
        \if\@@solutionmode1
            \textsc{\@title~\@assignno} -- \@studentID~\@author
        \else
            \textsc{Machine Learning \@title~\@assignno}
        \fi
    }
    \rhead{\thepage}
    \renewcommand\headrule{\vspace{-0.7em}\tikzrule[BrickRed, path fading=east]{.5\textwidth}{0.3mm}}
\else
    \fancyhf{}
    \renewcommand\headrule{%
        \ifodd\thepage
            \vspace{-0.7em}\tikzrule[BrickRed, path fading=east]{.5\textwidth}{0.3mm}
        \else
            \vspace{-0.7em}\hfill\tikzrule[BrickRed, path fading=west]{.5\textwidth}{0.3mm}
        \fi
    }
    \fancyhead[LO]{
        \fontfamily{LinuxLibertineT-OsF}\selectfont
        \if\@@solutionmode1
            \textsc{\@title~\@assignno} -- \@studentID~\@author
        \else
            \textsc{Machine Learning \@title~\@assignno}
        \fi
        \renewcommand\headrule{\vspace{-0.7em}\tikzrule[BrickRed, path fading=east]{.5\textwidth}{0.3mm}}
    }
    \fancyhead[RE]{
        \fontfamily{LinuxLibertineT-OsF}\selectfont
        \textsc{Machine Learning \@title~\@assignno}
    }
    \fancyhead[LE,RO]{\thepage}
\fi
\cfoot{}
% header and footer style for the first page
\fancypagestyle{firstpage}{
    \renewcommand\headrule{}
    \lhead{}
    \rhead{}
    \cfoot{
        \fontfamily{LinuxLibertineT-OsF}\selectfont
        \vspace*{-\firstfooteradditionalheight}
        \vspace{-1.5em}
        \tikzrule[purple, path fading=west]{.5\textwidth}{.15em}%
        \tikzrule[purple, path fading=east]{.5\textwidth}{.15em}

        \footnotesize\centering
        \if\@@solutionmode1
            This \MakeLowercase{\@title{}} is due \@duedate{} and the date of submission is \@date.
        \else
            This \MakeLowercase{\@title{}} is due \textbf{\@duedate{}} and the version of the problem set is \@date.
        \fi

        % LaTeX template information
```

```
        \LaTeX{} template for this \MakeLowercase{\@title{}} is
         ↪ \textit{SEU-ML-Assign}
        open source at \href{https://tvj.one/ml-tex}{tvj.one/ml-tex} under the MIT
         ↪ License.
        E-mail \href{mailto:me@tvj.one}{me@tvj.one} for support.
    }
}

%% Title Settings
\RequirePackage{tabularx}
\RequirePackage{afterpage}
\newcommand{\pdftitleadditionalname}{Solution}
\makeatletter
\renewcommand\maketitle{

    \if\@@solutionmode0
        \ifx\@instructor\@empty
            \let\@instructor\@author % author is the instructor (if not specified)
        \else
            \ifx\@author\@empty
                \let\@author\@instructor % instructor is the author (if not
                 ↪ specified)
            \fi
        \fi
    \fi

    \thispagestyle{firstpage}
    \fontfamily{LinuxLibertineT-OsF}\selectfont % set font as Linux Libertine
    \enlargethispage{-\firstfooteradditionalheight} % make room for the footer
    \begin{minipage}{10.5cm}
        \centering
        {
            \fontsize{36}{48}\selectfont
            \textcolor{Plum}{\scshape Machine Learning}
        }\\[.5em]
        {
            \if\@@solutionmode1
                \@studentID~\@author
                \qquad
            \fi
            \textit{Instructor:~\@instructor}
        }
    \end{minipage}
    \begin{minipage}{5cm}
        \vspace{0.7em}
        \centering
        {
            \large
            \fontfamily{LinuxBiolinumT-OsF}\selectfont
            \textcolor{BrickRed}{\@semester}
            \vspace{2mm}
        }
        \LARGE\@title~{\fontfamily{bch}\selectfont\@assignno}
    \end{minipage}
    \\[.3em]
    \tikzrule[cyan, path fading=east]{\textwidth}{.4em}

    \ifx\@mainproblem\@empty
        \vspace{2mm}
    \else
        \begin{center}
            \vspace{-1\baselineskip}\color{RoyalPurple!50!black}
            \LARGE\S~\@mainproblem~\S
        \end{center}
```

```
    \fi

    \fontfamily{cmr}\selectfont % Computer Modern

    % Set up document meta data
    % Note that it should be placed here because
    % by now \@author and \@title have been set.
    \hypersetup{
        pdfauthor={\@author},
        pdftitle={%
            \@title~\@assignno~
            \if\@@solutionmode1
                \pdftitleadditionalname{}
            \fi
            - Machine Learning%
        },
        pdfsubject={Machine Learning},
        pdfkeywords={%
            Machine Learning, \@title%
            \ifx\@mainproblem\@empty\else%
                , \@mainproblem%
            \fi%
        },
        pdfcreator={LaTeX with SEU-ML-Assign class},
        pdfproducer={LaTeX}
    }
}
\makeatother
```