

# The Westlake Beamer Theme<sup>\*</sup>

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## Abstract

The Westlake Beamer Theme is inspired by West Lake, a famous freshwater lake in Hangzhou, China, and also inspired by Westlake University.

## 1 Introduction & Usage

The introduction and usage instructions for the Westlake Beamer Theme are included in `beamertheme-westlake-demo.pdf`, which is also attached in the following 3 pages.

The demo loads the theme with the following lines

```
\usetheme[logo    = westlake-logo.pdf,
                badge = westlake-badge.pdf,
                mainbg = westlake-paint.png,
                basebg = plain.png]{westlake}
```

The code of the theme is implemented after the demo pages.

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<sup>\*</sup><https://github.com/myhsia/beamertheme-westlake>,  
<https://ctan.org/pkg/beamertheme-westlake>

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## Westlake Beamer Theme

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INTRODUCTION

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## INTRODUCTION



# Theme Introduction

This is the Westlake Beamer Theme. Different from the basic beamer class, this theme provides

## Highlights

- Decorations at the bottom of the homepage;
- Progress bar with percentage at the north east corner of every slide and section pages;
- Interfaces for modifying the logo, backgrounds, etc.

## The meaning of Westlake

### A freshwater lake

West Lake, also known as Xihu and by other names, is a freshwater lake in Hangzhou, China. Situated to the west of Hangzhou's former walled city, the lake has a surface area of  $6.39 \text{ km}^2$  ( $2.47 \text{ mi}^2$ ),<sup>[1]</sup> stretching 3.2 km (2.0 mi) from north to south and 2.8 km (1.7 mi) from east to west.<sup>[2]</sup>

### A private research university

Westlake University is a private research university in Hangzhou, Zhejiang, China.



## USAGE



## User Interface

To load this package, under the beamer class, write the line

```
\usetheme[⟨keys⟩]{Westlake}
```

where the supported keys are

- **themergb** =  $\langle fp\ num, fp\ num, fp\ num \rangle$  to config the rgb values (ranges between 0 to 1) of the theme color (Default: 0.132, 0.324, 0.570).
- **logo**, **badge**, **mainbg**, **basebg** =  $\langle file \rangle$  to config the graphic files for
  - logo: appears at the right side of every slide,
  - badge: appears at the north west corner of homepage and section pages,
  - main background: appears on homepage and section pages, and
  - base background: appears on other pages, respectively.

## Reference

- [1] Zhejiang Provincial Bureau of Surveying and Mapping. 2010-09-30.
- [2] Overview of the West Lake. Hangzhou Chronicles (in Chinese). Zhonghua Book Company. 1995. ISBN 7101017193.



## Thanks for Listening! Any Questions?

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## A The Source Code

Start the optionlist package for l3docstrip.

```
1 <*package>
```

Declare the package information.

```
2 \def \westlake@date {2026-03-02}
3 \def \westlake@version {v0.1A}
4 \ProvidesPackage{beamerthemewestlake}%
5 [\westlake@date\ \westlake@version Westlake beamer theme]
```

Switch to presentation mode.

```
6 \mode<presentation>
```

Set up the options.

```
7 \DeclareOptionBeamer{themergb}{\definecolor{westlake}{rgb}{#1}}
8 \DeclareOptionBeamer{logo} {\gdef \westlake@logo {#1}}
9 \DeclareOptionBeamer{badge} {\gdef \westlake@badge {#1}}
10 \DeclareOptionBeamer{mainbg} {\gdef \westlake@mainbg {#1}}
11 \DeclareOptionBeamer{basebg} {\gdef \westlake@basebg {#1}}
12 \ExecuteOptionsBeamer{themergb = {.132, .324, .570}}
13 \ProcessOptionsBeamer
```

Configure the theme color and the inner theme.

```
14 \usecolortheme[named = westlake]{structure}
15 \useinnertheme{rounded}
```

Load the tikz package with the fadings library.

```
16 \RequirePackage{tikz}
17 \usetikzlibrary{fadings}
```

`\ifsection` A boolean variable to indicate whether the current page is a section page.

```
18 \newif \ifsection
```

*(End of definition for \ifsection.)*

Configure the section page.

```
19 \AtBeginSection[] {%
20   \sectiontrue
21   \begin{frame}
22     \tikz [remember picture, overlay]
23       \node [below right, shift = {(0.5ex,-1em)}]
24         at (current page.north west)
25         {\includegraphics
26           [height = \dimeval{2\paperheight/15}]{\westlake@badge}};
27   \vfill
28   \usebeamerfont{title}\bfseries \color{westlake}%
```

```

29 \insertsectionhead \par
30 \tikz{%
31   \draw [ultra thick, line cap = round, westlake!20]
32     (0,0) --++ (2\linewidth/3,0);
33   \filldraw [ultra thick, line cap = round, westlake!60, path fading = west]
34     (0,0) --++
35     (\fpeval{\insertpagenumber/\insertdocumentendpage * 2/3}\linewidth,0);
36 }
37 \vfill
38 \end{frame}
39 \sectionfalse
40 }

```

Configure the background.

```

41 \usebackgroundtemplate{%
42   \tikz [remember picture, overlay] {%
43     \ifnum \insertpagenumber=1
44       \ifcsname westlake@mainbg\endcsname
45         \node [above, inner sep = 0pt, opacity = .2]
46           at (current page.south)
47           {\includegraphics
48             [width = \paperwidth, height = \paperwidth]{\westlake@mainbg}};
49       \fi
50     \fill [westlake!90]
51       (current page.south west) --++ ({-pi/6*\paperwidth},.4)
52       cos + ({(1/18+pi/12)*\paperwidth},+.4)
53       sin + ({(1/18+pi/12)*\paperwidth},+.4)
54       cos + ({(1/18+pi/12)*\paperwidth},-.4)
55       sin + ({(1/18+pi/12)*\paperwidth},-.4)
56       cos + ({(1/18+pi/12)*\paperwidth},+.4) --
57       (current page.south east) -- cycle;
58     \fill [westlake!90, opacity = .5]
59       (current page.south east) --++ (-.75\paperwidth, 0)
60       to[bend left = 6] ([yshift = 1.4cm]current page.south east) -- cycle;
61   \else
62     \ifsection \ifcsname westlake@mainbg\endcsname
63       \node [above, inner sep = 0pt, opacity = .2]
64         at (current page.south)
65         {\includegraphics
66           [width = \paperwidth, height = \paperwidth]{\westlake@mainbg}};
67     \fi
68   \else \ifcsname westlake@basebg\endcsname
69     \node [above, inner sep = 0pt, opacity = .8]
70       at (current page.south)
71       {\includegraphics

```



```

72         [width = \paperwidth, height = \paperwidth]{\westlake@basebg}};
73     \fi
74 \fi
75     \node [inner sep = 0pt, opacity = .1, xshift = -2em]
76         at (current page.east)
77         {\includegraphics[height = .75\paperheight]{\westlake@logo}};
78 \fi
79 }
80 }

```

Configure the badge at the north west corners.

```

81 \titlegraphic{%
82     \tikz [remember picture, overlay]
83         \node [below right, shift = {(0.5ex,-.5em)}] at (current page.north west)
84         {\includegraphics[height = \dimeval{2\paperheight/15}]{\westlake@badge}};
85 }

```

Configure the title page, remove the footline and headline and set the title font.

```

86 \let \@maketitle \maketitle
87 \renewcommand \maketitle {\begingroup
88     \setbeamertemplate{footline}{\null}
89     \setbeamertemplate{headline}{\null}
90     \setbeamerfont{title}{series = \bfseries \Large}
91     \@maketitle \endgroup
92 }

```

Configure the blocks, including the colors and the opacity.

```

93 \setbeamercolor{block title}
94 {use = structure, fg = structure.fg, bg = structure.fg!20!bg}
95 \setbeamercolor{block title alerted}
96 {use = alerted text, fg = alerted text.fg, bg = alerted text.fg!20!bg}
97 \setbeamercolor{block title example}
98 {use = example text, fg = example text.fg, bg = example text.fg!20!bg}
99 \setbeamercolor{block body}{%
100     use = block title, parent = normal text,
101     bg = block title.bg!50!bg
102 }
103 \setbeamercolor{block body alerted}{%
104     use = block title alerted, parent = normal text,
105     bg = block title alerted.bg!50!bg
106 }
107 \setbeamercolor{block body example}{%
108     use = block title example, parent = normal text,
109     bg = block title example.bg!50!bg
110 }
111 \addtobeamertemplate{block begin}

```

```

112 {\pgfsetfillopacity{.8}}{\pgfsetfillopacity{1}}
113 \addtobeamertemplate{block alerted begin}
114 {\pgfsetfillopacity{.8}}{\pgfsetfillopacity{1}}
115 \addtobeamertemplate{block example begin}
116 {\pgfsetfillopacity{.8}}{\pgfsetfillopacity{1}}

```

Configure the footer, remove navigation buttons, and set the color series.

```

117 \useoutertheme{infolines}
118 \setbeamertemplate{navigation symbols}{}
119 \setbeamercolor{title}{parent = author in head/foot}
120 \setbeamercolor*{palette primary}
121 {use = structure, fg = black, bg = structure.fg!30!white}
122 \setbeamercolor*{palette secondary}
123 {use = structure, fg = white, bg = structure.fg!60!white}
124 \setbeamercolor*{palette tertiary}
125 {use = structure, fg = white, bg = structure.fg!90!white}

```

Configure the header, draw the progress bar.

```

126 \addtobeamertemplate{headline}{}{%
127 \tikz [remember picture, overlay]{%
128 \ifnum \interval{2*\insertpagenumber}>\insertdocumentendpage
129 \filldraw [westlake!60]
130 (current page.north) --++ (0,-4ex) [rounded corners = 1ex] --++
131 (\fpeval
132 {\insertpagenumber/\insertdocumentendpage/2}\paperwidth,0)
133 [rounded corners = 0pt] --++ (4ex,4ex)
134 node [left = 2ex, midway, white, font = \bfseries \small]
135 {\interval{100*\insertpagenumber/\insertdocumentendpage}\%} -- cycle;
136 \else
137 \filldraw [westlake!60]
138 (current page.north) --++ (0,-4ex) [rounded corners = 1ex] --++
139 (\fpeval
140 {\insertpagenumber/\insertdocumentendpage/2}\paperwidth,0)
141 [rounded corners = 0pt] --++ (4ex,4ex)
142 node [right = 2ex, midway, westlake, font = \bfseries \small]
143 {\interval{100*\insertpagenumber/\insertdocumentendpage}\%} -- cycle;
144 \fi
145 }
146 }

147 \RequirePackage{ragged2e}
148 \justifying
149 \let\raggedright=\justifying

```

Configure the bibliography list format.

```

150 \setbeamertemplate{bibliography item}[text]

```



Switch to all mode.

<sup>151</sup> `\mode<all>`

<sup>152</sup> `\endinput`

End the optionlist package for l3docstrip.

<sup>153</sup> `\</package>`

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