

# The Westlake Beamer Theme\*

Mingyu Xia<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[logobg = westlake-logo.pdf,  
          lbadge = 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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\*<https://github.com/myhsia/beamertheme-westlake>,

<https://ctan.org/pkg/beamertheme-westlake>

<sup>†</sup>[xiamingyu@westlake.edu.cn](mailto:xiamingyu@westlake.edu.cn)

# Westlake Beamer Theme

Mingyu Xia <xiamingyu@westlake.edu.cn>

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INTRODUCTION

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## INTRODUCTION

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## 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 km<sup>2</sup> (2.47 mi<sup>2</sup>),<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

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## User Interface

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

```
\usetheme[⟨keys⟩]{westlake}
```

where the supported keys are

- **themeRGB** =  $\langle num, num, num \rangle$  to config the RGB values (ranges between 0 to 1) of the theme color (Default: {0, 70, 134}).
- **lbadge**, **rbadge**, **logobg**, **mainbg**, **basebg** =  $\langle file \rangle$  to config the graphic files for
  - logo: appears at the right side of every slide,
  - lbadge/rbadge: appears at the north west/east corner of homepage and section pages,
  - main background: appears on homepage and section pages, and
  - base background: appears on other pages, respectively.
- **logobg.op**, **mainbg.op**, **basebg.op** =  $\langle fp num \rangle$  to config the opacity of the corresponding graphic (Default: 0.1, 0.16, 0.8).

## Reference

[1] Zhejiang Provincial Bureau of Surveying and Mapping. 2010-09-30.

[2] Overview of the West Lake. Hangzhou Chronicles. Zhonghua Book Company. 1995.



## 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 {2026-03-06}
3 \def \westlake@version {v0.2A}
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{lbadge} {\gdef \westlake@lbadge {#1}}
9 \DeclareOptionBeamer{rbadge} {\gdef \westlake@rbadge {#1}}
10 \DeclareOptionBeamer{logobg} {\gdef \westlake@logobg {#1}}
11 \DeclareOptionBeamer{logobg.op} {\gdef \westlake@logobg@op {#1}}
12 \DeclareOptionBeamer{mainbg} {\gdef \westlake@mainbg {#1}}
13 \DeclareOptionBeamer{mainbg.op} {\gdef \westlake@mainbg@op {#1}}
14 \DeclareOptionBeamer{basebg} {\gdef \westlake@basebg {#1}}
15 \DeclareOptionBeamer{basebg.op} {\gdef \westlake@basebg@op {#1}}
16 \ExecuteOptionsBeamer{themeRGB = {0, 70, 134},
17 logobg.op = .1, mainbg.op = .16, basebg.op = .8}
18 \ProcessOptionsBeamer
```

Configure the theme color and the inner theme.

```
19 \usecolortheme[named = westlake]{structure}
20 \useinnertheme{rounded}
```

Load the tikz package with the fadings library.

```
21 \RequirePackage{tikz}
22 \usetikzlibrary{fadings}
```

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

```
23 \newif \ifsection
```

*(End of definition for \ifsection.)*

Configure the section page.

```
24 \AtBeginSection[] {%
25 \sectiontrue
26 \begin{frame}
27 \tikz [remember picture, overlay] {%
28 \ifcsname westlake@lbadge\endcsname
```

```

29     \node [below right, shift = {(0.5ex,-1em)}]
30         at (current page.north west)
31         {\includegraphics
32             [height = \dimeval{2\paperheight/15}]{\westlake@lbadge}};
33     \fi
34     \ifcsname westlake@rbadge\endcsname
35         \node [below left, shift = {(-.5ex,-1em)}]
36             at (current page.north east)
37             {\includegraphics
38                 [height = \dimeval{2\paperheight/15}]{\westlake@rbadge}};
39     \fi
40 }
41 \vfill
42 \usebeamerfont{title}\bfseries \color{westlake}%
43 \insertsectionhead \par
44 \tikz{%
45     \draw [ultra thick, line cap = round, westlake!20]
46         (0,0) ---++ (2\linewidth/3,0);
47     \filldraw [ultra thick, line cap = round, westlake!60, path fading = west]
48         (0,0) ---++
49         (\fpeval{\insertpagenumber/\insertdocumentendpage * 2/3}\linewidth,0);
50 }
51 \vfill
52 \end{frame}
53 \sectionfalse
54 }

```

Configure the background.

```

55 \usebackgroundtemplate{%
56     \tikz [remember picture, overlay] {%
57         \ifnum \insertpagenumber=1
58             \ifcsname westlake@mainbg\endcsname
59                 \node [above, inner sep = 0pt, opacity = \westlake@mainbg@op]
60                     at (current page.south)
61                     {\includegraphics
62                         [width = \paperwidth, height = \paperwidth]{\westlake@mainbg}};
63             \fi
64         \fill [westlake!90]
65             (current page.south west) ---++ ({-pi/6*\paperwidth},.4)
66             cos + ({(1/18+pi/12)*\paperwidth},+.4)
67             sin + ({(1/18+pi/12)*\paperwidth},+.4)
68             cos + ({(1/18+pi/12)*\paperwidth},-.4)
69             sin + ({(1/18+pi/12)*\paperwidth},-.4)
70             cos + ({(1/18+pi/12)*\paperwidth},+.4) --
71             (current page.south east) -- cycle;

```

```

72     \fill [westlake!90, opacity = .5]
73         (current page.south east) --++ (-.75\paperwidth, 0)
74         to[bend left = 6] ([yshift = 1.4cm]current page.south east) -- cycle;
75 \else
76     \ifsection \ifcsname westlake@mainbg\endcsname
77         \node [above, inner sep = 0pt, opacity = \westlake@mainbg@op]
78             at (current page.south)
79             {\includegraphics
80              [width = \paperwidth, height = \paperwidth]{\westlake@mainbg}};
81     \fi
82 \else \ifcsname westlake@basebg\endcsname
83     \node [above, inner sep = 0pt, opacity = \westlake@basebg@op]
84         at (current page.south)
85         {\includegraphics
86          [width = \paperwidth, height = \paperwidth]{\westlake@basebg}};
87     \fi
88     \ifcsname westlake@logobg\endcsname
89         \node [inner sep = 0pt, opacity = \westlake@logobg@op, xshift = -2em]
90             at (current page.east)
91             {\includegraphics[height = .75\paperheight]{\westlake@logobg}};
92     \fi
93 \fi
94 \fi
95 }
96 }

```

Configure the badge at the north west corners.

```

97 \titlegraphic{%
98     \tikz [remember picture, overlay] {%
99         \ifcsname westlake@lbadge\endcsname
100         \node [below right, shift = {(0.5ex,-.5em)}] at (current page.north west)
101             {\includegraphics
102              [height = \dimeval{2\paperheight/15}]{\westlake@lbadge}};
103     \fi
104     \ifcsname westlake@rbadge\endcsname
105         \node [below left, shift = {(-.5ex,-.5em)}] at (current page.north east)
106             {\includegraphics
107              [height = \dimeval{2\paperheight/15}]{\westlake@rbadge}};
108     \fi
109     }
110 }

```

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

```

111 \let \@maketitle \maketitle
112 \renewcommand \maketitle {\begingroup
113     \setbeamertemplate{footline}{

```

```

114 \setbeamertemplate{headline}{}
115 \setbeamerfont{title}{series = \bfseries \Large}
116 \@maketitle \endgroup
117 }

```

Configure the blocks, including the colors and the opacity.

```

118 \setbeamercolor{block title}
119 {use = structure, fg = structure.fg, bg = structure.fg!20!bg}
120 \setbeamercolor{block title alerted}
121 {use = alerted text, fg = alerted text.fg, bg = alerted text.fg!20!bg}
122 \setbeamercolor{block title example}
123 {use = example text,fg = example text.fg, bg = example text.fg!20!bg}
124 \setbeamercolor{block body}{%
125 use = block title, parent = normal text,
126 bg = block title.bg!50!bg
127 }
128 \setbeamercolor{block body alerted}{%
129 use = block title alerted, parent = normal text,
130 bg = block title alerted.bg!50!bg
131 }
132 \setbeamercolor{block body example}{%
133 use = block title example, parent = normal text,
134 bg = block title example.bg!50!bg
135 }
136 \addtobeamertemplate{block begin}
137 {\pgfsetfillopacity{.8}}{\pgfsetfillopacity{1}}
138 \addtobeamertemplate{block alerted begin}
139 {\pgfsetfillopacity{.8}}{\pgfsetfillopacity{1}}
140 \addtobeamertemplate{block example begin}
141 {\pgfsetfillopacity{.8}}{\pgfsetfillopacity{1}}

```

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

```

142 \useoutertheme{infolines}
143 \setbeamertemplate{navigation symbols}{}
144 \setbeamercolor{title}{parent = author in head/foot}
145 \setbeamercolor*{palette primary}
146 {use = structure, fg = black, bg = structure.fg!30!white}
147 \setbeamercolor*{palette secondary}
148 {use = structure, fg = white, bg = structure.fg!60!white}
149 \setbeamercolor*{palette tertiary}
150 {use = structure, fg = white, bg = structure.fg!90!white}

```

Configure the header, draw the progress bar.

```

151 \addtobeamertemplate{headline}{}{%
152 \tikz [remember picture, overlay]{%
153 \ifnum \inteval{2*\insertpagenumber}>\insertdocumentendpage

```

```

154     \filldraw [westlake!60]
155         (current page.north) ---++ (0,-4ex) [rounded corners = 1ex] ---++
156         (\fpeval
157             {\insertpagenumber/\insertdocumentendpage/2}\paperwidth,0)
158         [rounded corners = 0pt] ---++ (4ex,4ex)
159         node [left = 2ex, midway, white, font = \bfseries \small]
160         {\inteval{100*\insertpagenumber/\insertdocumentendpage}\%} -- cycle;
161     \else
162     \filldraw [westlake!60]
163         (current page.north) ---++ (0,-4ex) [rounded corners = 1ex] ---++
164         (\fpeval
165             {\insertpagenumber/\insertdocumentendpage/2}\paperwidth,0)
166         [rounded corners = 0pt] ---++ (4ex,4ex)
167         node [right = 2ex, midway, westlake, font = \bfseries \small]
168         {\inteval{100*\insertpagenumber/\insertdocumentendpage}\%} -- cycle;
169     \fi
170 }
171 }

172 \RequirePackage{ragged2e}
173 \justifying
174 \let\raggedright=\justifying

Configure the bibliography list format.
175 \setbeamertemplate{bibliography item}[text]

Switch to all mode.
176 \mode<all>

177 \endinput

End the optionlist package for l3docstrip.
178 </package>

```

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