

cite year



Get started with the GT SSDL Beamer Theme

Using \LaTeX to prepare slides

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Beamer for GT SSDL presentations

Chapter



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Beamer for GT SSDL presentations

If you would like \LaTeX in your presentation, Beamer is a great way to go!

- Beamer has a detailed [user manual](#), but we will go over the most common features.
- The most common of all slide types involve bulleted points, like these.
- Regular \LaTeX commands will help you type math, as below¹.

$$\mathcal{L}(\theta) = \log \sum_{k=1}^{|Z|} Q(z_k | y) \frac{P(z_k, y | \theta)}{Q(z_k | y)} \geq \sum_{k=1}^{|Z|} Q(z_k | y) \log \frac{P(z_k, y | \theta)}{Q(z_k | y)}$$

¹A test footnote for both columns



Beamer for GT SSDL presentations

Chapter



Slide Layouts

An overview of some different slide types you can have.





More with bullet points

Unrolling

- You could also unroll the slides in a sequence.



More with bullet points

Unrolling

- You could also unroll the slides in a sequence.
- Just added [$\leftarrow\rightarrow$] option to \begin{itemize} in this frame.



More with bullet points

Unrolling

- You could also unroll the slides in a sequence.
- Just added [$\leftarrow\rightarrow$] option to `\begin{itemize}` in this frame.
- P.S. If you end up using verbatim text (i.e. `\verb` command) as I did to typeset the bullet point above, make sure to add `[fragile]` option to your frame :)



More with bullet points

Global alerts

Sequential slide unrolling can be further enhanced using alerts.

- We will shortly show what they are.



More with bullet points

Global alerts

Sequential slide unrolling can be further enhanced using alerts.

- We will shortly show what they are.
- This is what they are :)



More with bullet points

Local alerts

Alerts can also be localized.

- The `\alert{}` command provides this functionality.
- Like this.
- You may as well choose the highlighting to stick.
 - Previous one did not, but this one will.
- Another common slide type involves columns and/or images.
 - We show them in the next slides.



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GT Images and columns

Adding images works like in normal L^AT_EX:

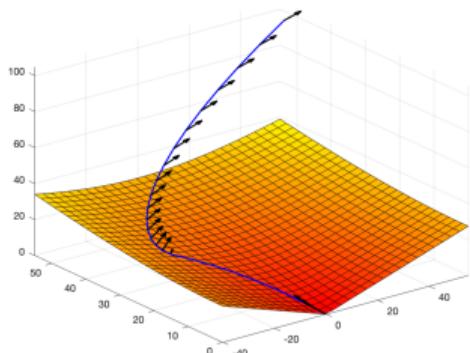
Code for Adding Images

This slide layout was achieved using the `columns` feature.
The number and widths of the columns is totally user
preference. Another `columns` example follows on the next
slide.





Another images/columns example



Left: Solving for optimal fuel consumption **Right:** Solving for optimal time taken

Figure: Minimum fuel trajectory

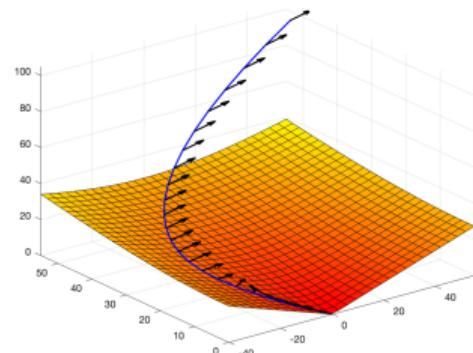
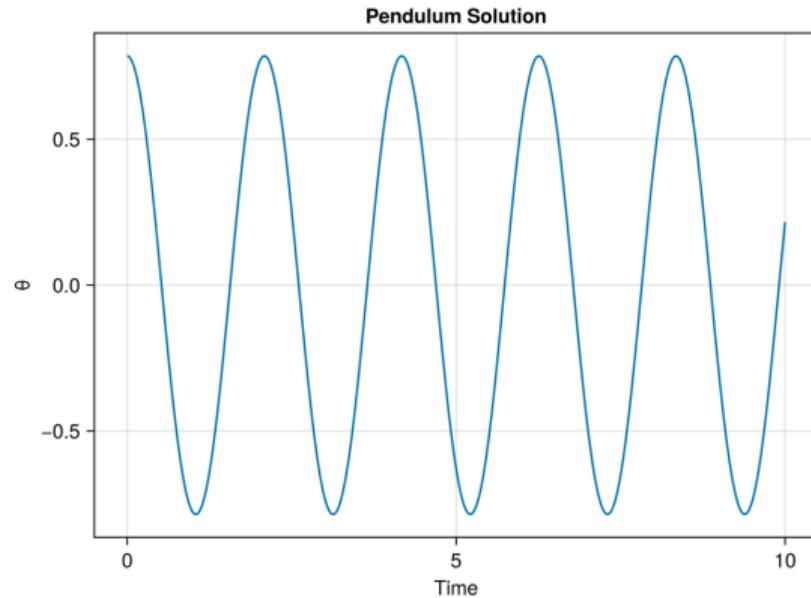


Figure: Minimum time trajectory



Use "magick convert -coalesce something.gif something.png"

GT Embed Video



 **Blocks for theorems**

Blocks are a great UI element and can be used for typesetting theorems.

Theorem

If $|\mathcal{H}| < \infty$, then \mathcal{H} is PAC Learnable.

GT Blocks for partitioning

Blocks are also a great way to partition your slide. They can be combined with columns, as shown here.

Standard Blocks

For the light theme, their color matches the footline. We will discuss light and dark themes soon.

```
\begin{block}{title}  
content...  
\end{block}
```

Color Blocks

Similar to the ones on the left, but you pick the color. Text will be white by default, but you may set it with an optional argument.

```
\begin{colorblock}[black]{uihteal}{title}  
content...  
\end{colorblock}
```



Side-Picture Slides

Just another another layout you may want to use.

- These type of slides are created using
`\begin{sidepic}{<image>}{<title>}`
- Otherwise, `sidepic` works just like `frame`



GT Pseudocode Example

Algorithm Running EM using the joint PMFs, P, Q, \hat{P}

Input: A belief network \mathcal{G} and dataset \mathcal{D}

Output: ML estimate of network parameter matrix \hat{P}

```
 $\hat{P} \leftarrow \text{RandomPMF}()$ 
LogLikelihood  $\leftarrow$  empty list
 $t \leftarrow 0$ 
repeat
    CurrentLogLikelihood  $\leftarrow 0$ 
     $Q \leftarrow 0$ 
    for  $d \in \mathcal{D}$  do
         $\hat{P}(z_d | y_d) \leftarrow \hat{P}(z_d, y_d)\delta(y_d)$ 
        CurrentLogLikelihood  $\leftarrow$  CurrentLogLikelihood + Sum( $\hat{P}(z_d | y_d)$ )
         $Q \leftarrow Q + \hat{P}(z_d | y_d) \times \delta(y_d)$  ▷ E-step
    end for
    LogLikelihood[ $t$ ] = CurrentLogLikelihood
     $\hat{P} \leftarrow \text{Normalize}(Q)$  ▷ M-step
     $t \leftarrow t + 1$ 
until convergence
return  $\hat{P}$ 
```



Personalization

Themes, fonts and colors



GT Let's talk themes

Three fundamental features greatly affect the look and feel of your slides. Two of them can be controlled with the `\themecolor` command.

- The background color.
 - The default is light theme, which has a light background, which we are currently using.
- The foreground color.
 - The light theme has a dark foreground (i.e. text color) and vice versa.
- The third, the footer color can be set using `\footlinecolor` command.
 - We are currently using  gtblue color for our footer.
 - The default is no footline, but I believe page numbers are incredibly helpful for your audience to ask questions later.

GT Let's talk themes

- I just called `\themecolor{dark}` before `\begin{frame}` for this slide.
 - Ideally you should set the theme globally in the preamble (i.e. before `\begin{document}`). Default is light.
 - If you switch the theme from light to dark or vice versa in the middle of the presentation (like we just did), you **may** have to follow up with `\usebeamercolor[fg]{normal text}` as well, as we did for this slide, otherwise the foreground color might not be automatically updated.
- You can also change the footer color with `\footlinecolor{color}`, as we did for this slide.
- All the changes we talked about here happen for the current **as well as subsequent** frames.
 - I will manually revert all the changes for the next slide.

GT Adding Bibliography

- Footnote citation command is `\footenote{\cite{YOUR-REFERENCE-KEY}}1`
- Footnote number can also be modified ³
- If you want to add reference without footnote use
`\nocite{YOUR-REFERENCE-KEY}[Sasaki, 2023]` (Reference is still added at the end)

¹Sasaki *et al.*, "Nonlinear Spacecraft Formation Flying using Constrained Differential Dynamic Programming"

³Sasaki *et al.*, "Nonlinear Spacecraft Formation Flying using Constrained Differential Dynamic Programming"

GT References

- [1] T. Sasaki, K. Ho, and E. G. Lightsey, "Nonlinear Spacecraft Formation Flying using Constrained Differential Dynamic Programming," *2022 AAS/AIAA Astrodynamics Specialist Conference*, 2022.
- [2] T. Sasaki, K. Ho, and E. G. Lightsey, "Model Predictive Path Integral Control for Spacecraft Rendezvous and Proximity Operations on Elliptic Orbits," *2023 AAS/AIAA Astrodynamics Specialist Conference*, 2023.

GT Changing Footers

Footers can be modified by

```
\newcommand{\insertfootlinetitle}{<YOUR-FOOTNOTE?>}
```

GT Changing Back Matter

The back matter can be modified in the "beamerthemegy.sty."

```
246  % Define backmatter
247  \newcommand{\backmatter}{%
248  \begingroup
249  \setbeamertemplate{footline}{}%
250  \themecolor{dark}
251  \begin{frame}[c]
252  \centering
253  \begin{minipage}{0.6\textwidth}
254  \usebeamercolor[fg]{normal text}
255  \centering\huge{Thank you for your attention!} \\
256  \vspace{10mm} Tomohiro Sasaki \\\texttt{tomohiro.sasaki@gatech.edu}
257  \end{minipage}
258  \end{frame}
259 \endgroup
260 }
261 }
```



Thank you for your
attention!

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