


# **Rapidly Prototyping Presentations Using Markdown with Marp**

Jifeng Wu

March 17, 2023

# Contents

- What is Marp?
  - Architecture 
  - Advantages
  - How to Use It?
- Using Markdown in a Marp Presentation
  - Directives
  - Typesetting Math
  - Inserting Footnotes
  - Inserting Images and Backgrounds
  - Using Themes
- Showcase of Examples

- In the need to create a *decent, academic* presentation *fast*?
- LaTeX overly verbose?
- No time to spend on adjusting style ?
- Have notes written in Markdown?

**I Hate Beamer**

Victor Sanches Portella

UDLS @ UBC CS

# Architecture

## The Solution

Create presentations with  
Markdown using Marp!



Marp

Markdown Presentation Ecosystem

1

### How to write slides

Split pages by horizontal ruler ( --- ). It's very simple!

```
abbas@abbas-ThinkPad-X1-Carbon-Gen-9: /media/abbas/Wind...
abbas@abbas-ThinkPad-X1-Carbon-Gen-9: /media/abbas/Windows/Users/abbas/Desktop/Rap
idly Prototyping Presentations Using Markdown with Marp$ marp --allow-local-files
example.md -o example.pdf
[ INFO ] Converting 1 markdown...
[ WARN ] Insecure local file accessing is enabled for conversion from
example.md.
[ INFO ] example.md => example.pdf
abbas@abbas-ThinkPad-X1-Carbon-Gen-9: /media/abbas/Windows/Users/abbas/Desktop/Rap
idly Prototyping Presentations Using Markdown with Marp$
```

```
---
marp: true
paginate: true
---

![[bg left:40% 80%]](https://marp.app/assets/marp.svg)

# **Marp**


Markdown Presentation Ecosystem

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# How to write slides

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# Advantages

Focus on writing your story in Markdown undistracted.

- No verbose LaTeX syntax.
- No tightly-coupled styling.
- Reuse existing Markdown notes.

```
75 - What is Marp?
76   - Architecture
77   - Advantages👉
78   - How to Use It?
79 - Using Markdown in a Marp Presentation
80   - Basic Fomat
81   - Typesetting Math
82   - Inserting Footnotes
83   - Inserting Images and Backgrounds
84   - Using Themes
85 - Showcase of Examples
```

```
86 -----
```

```
88
89 <!-- _header: Advantages -->
```

```
90
91 Focus on writing your story in Markdown
undistracted.
```

```
92
93 - No verbose LaTeX syntax.
94 - No tightly-coupled styling.
95 - Reuse existing Markdown notes.
```



```
96
97 ![[bg left contain]](images/
focus_on_writing_your_story.png)
```

```
98
99 -----
```

# Title Presentation

Name speaker | Place



Discover the world at Leiden University

1

## コードブロック

```
import torch
print(torch.cuda.is_available())
```

こんな感じでコードブロックを書くことができる。

```
from transformers import AutoModelForMaskedLM, AutoTokenizer
model = AutoModelForMaskedLM.from_pretrained("cl-tohoku/bert-base-japanese-whole-word-masking")
tokenizer = AutoTokenizer.from_pretrained("cl-tohoku/bert-base-japanese-whole-word-masking")

inputs = tokenizer.encode_plus("私はとても[MASK]です。", return_tensors='pt')
outputs = model(**inputs)
tokenizer.convert_ids_to_tokens(outputs.logits[0][1:-1].argmax(axis=-1))
```

横幅は自動調整される（ドキュメントの[Auto-scaling](#)を参照）。

## Advantages

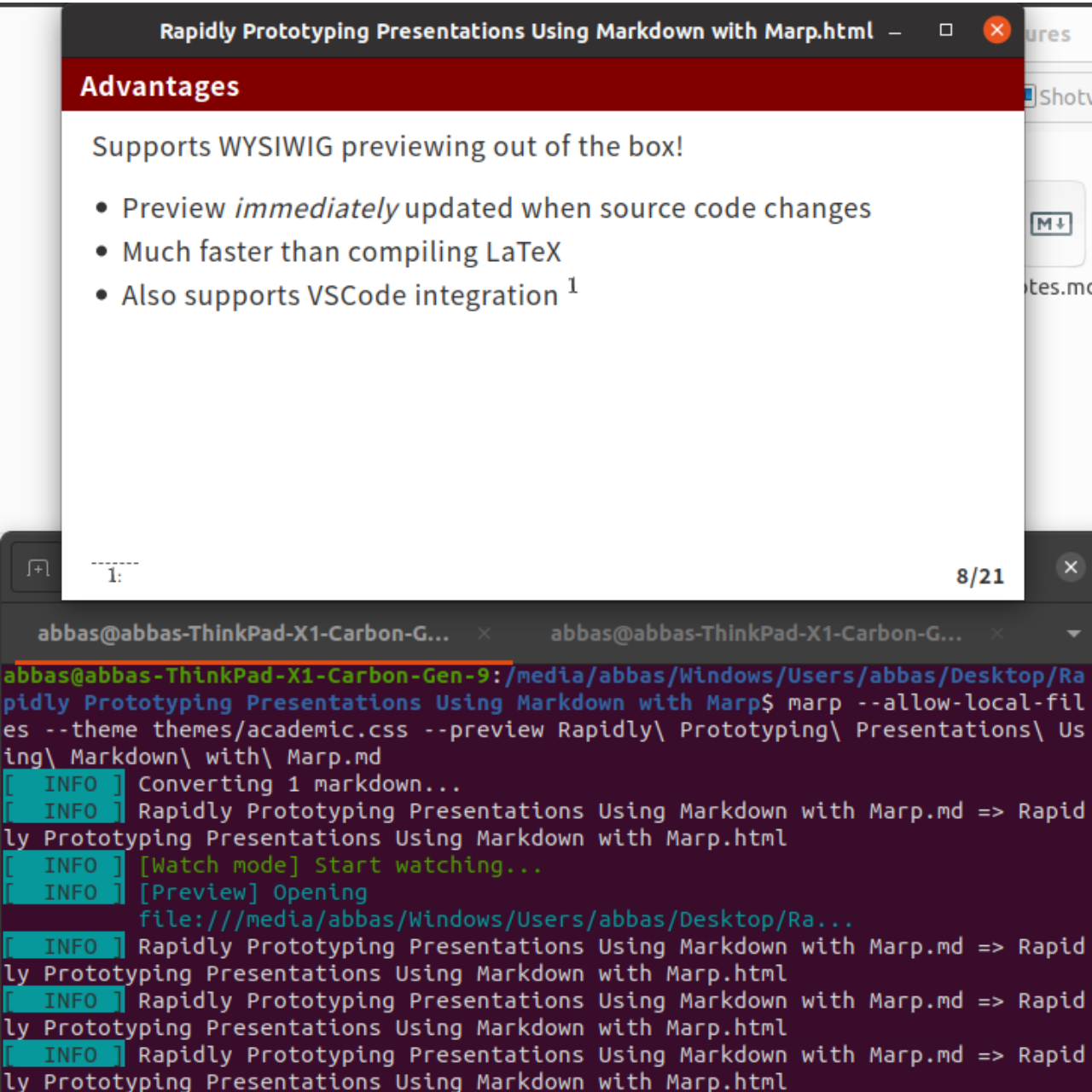
- Lots of themes! <sup>1</sup>
- Also easy to modify one or create your own.
  - Vanilla CSS
  - No LaTeX Black Magic!

```
header {
  background-color: #800000;
  color: #fff;
  font-size: 1em;
  font-weight: 700;
}
```

# Advantages

Supports WYSIWIG previewing out of the box!

- Preview *immediately* updated when source code changes
- Much faster than compiling LaTeX
- Also supports VSCode integration <sup>1</sup>



1: <https://marketplace.visualstudio.com/items?itemName=marp-team.marp-vscode>



# Advantages

Generates self-contained files for sharing:

- Vector:
  - HTML
  - PDF
- Raster:
  - PNG
  - JPEG



Marp

Markdown Presentation Ecosystem

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## How to write slides

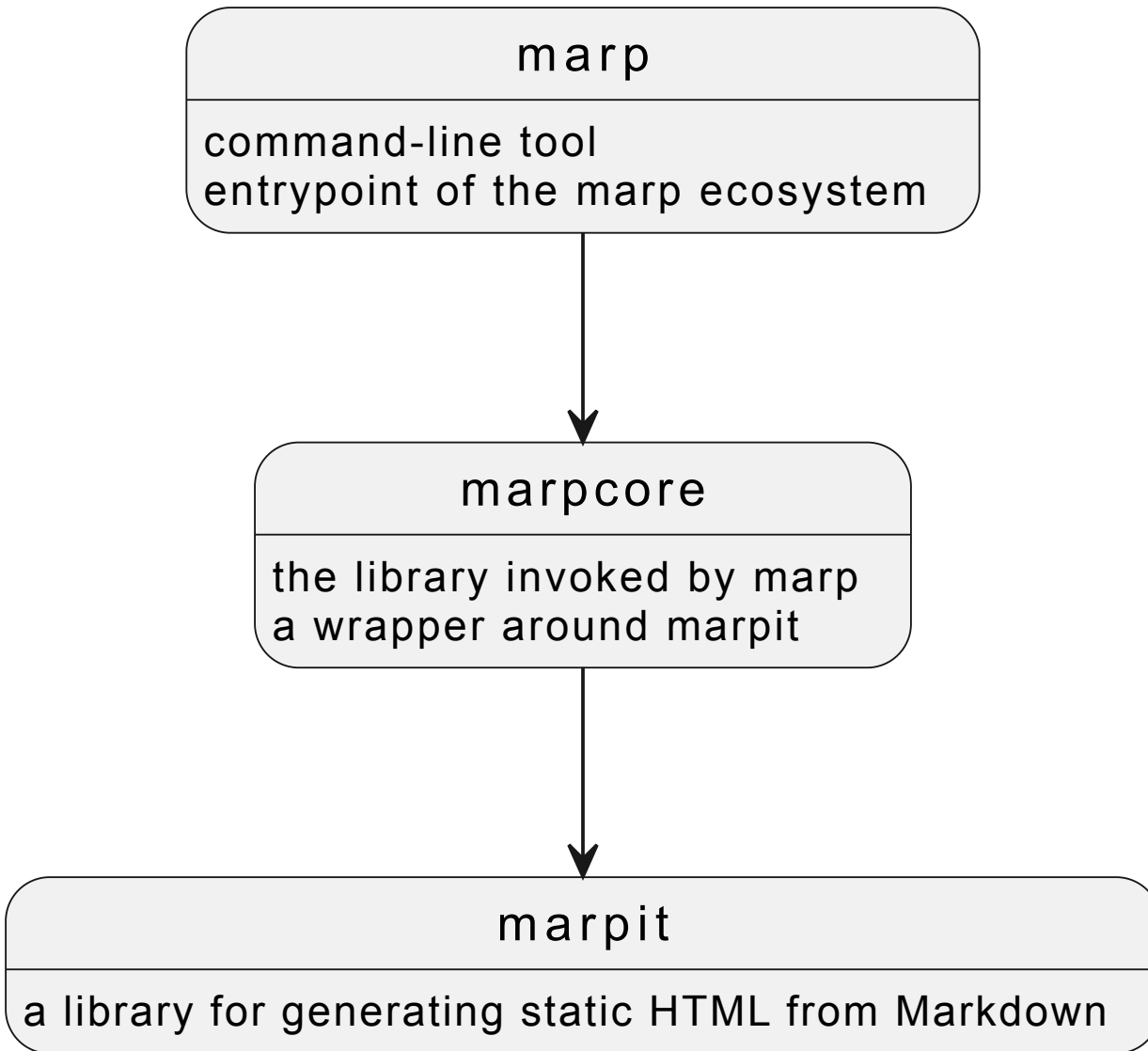
Split pages by horizontal ruler ( `---` ). It's very simple!

```
abbas@abbas-ThinkPad-X1-Carbon-Gen-9: /media/abbas/Wind...
abbas@abbas-ThinkPad-X1-Carbon-Gen-9: /media/abbas/Windows/Users/abbas/Desktop/Rap
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abbas@abbas-ThinkPad-X1-Carbon-Gen-9: /media/abbas/Windows/Users/abbas/Desktop/Rap
idly Prototyping Presentations Using Markdown with Marp$
```

# Advantages

Open-source and extensible framework


- Written in TypeScript
- Lots of usable plugins



---

<https://github.com/marp-team/marp-cli>  
<https://github.com/marp-team/marp-core>  
<https://github.com/marp-team/marpit>

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# How to Use It?

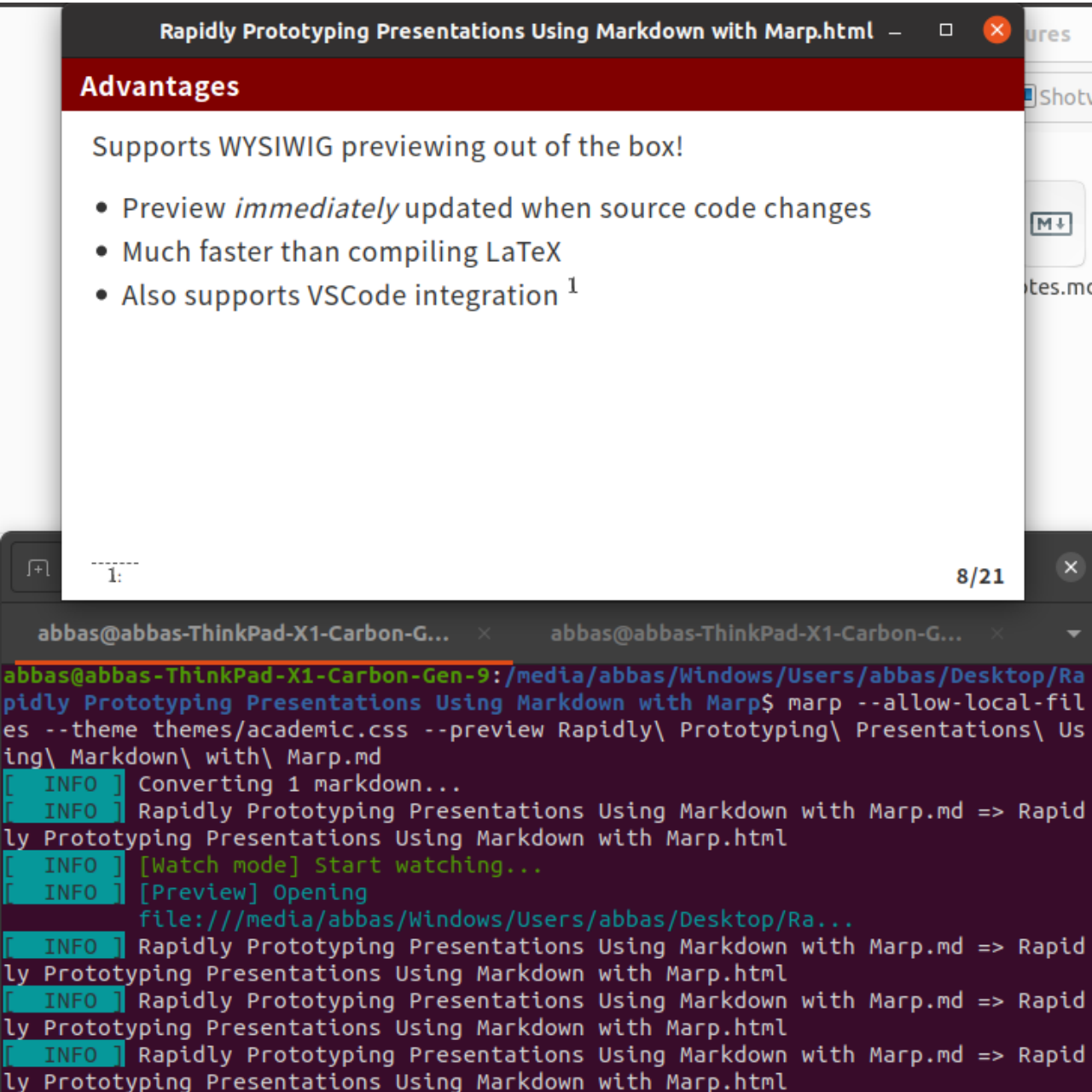
Marp is an open-source and extensible framework written in *TypeScript*.

1. Install `node`.
2. `npm install -g @marp-team/marp-cli`.
3. Now you can use `marp` from the command-line. It's the entry point to everything we do with the Marp framework.
4. Google Chrome or Microsoft Edge required to convert to PDF.

# How to Use It?

## WYSIWIG Previewing

The preview updates every time the Markdown file is saved.



```
marp \
--allow-local-files \
--preview \
<other options> \
<Markdown file>
```

## How to Use It?

# Generating a Standalone HTML or PDF File

Google Chrome or Microsoft Edge required to output PDF.



Marp

Markdown Presentation Ecosystem

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### How to write slides

Split pages by horizontal ruler ( ——— ). It's very simple!

```
abbas@abbas-ThinkPad-X1-Carbon-Gen-9: /media/abbas/Wind...
abbas@abbas-ThinkPad-X1-Carbon-Gen-9: /media/abbas/Windows/Users/abbas/Desktop/Rapidly Prototyping Presentations Using Markdown with Marp$ marp --allow-local-files example.md -o example.pdf
[ INFO ] Converting 1 markdown...
[ WARN ] Insecure local file accessing is enabled for conversion from example.md.
[ INFO ] example.md => example.pdf
abbas@abbas-ThinkPad-X1-Carbon-Gen-9: /media/abbas/Windows/Users/abbas/Desktop/Rapidly Prototyping Presentations Using Markdown with Marp$
```

```
marp \
--allow-local-files \
<other options> \
<Markdown file> \
-o <output file ending with .html or .pdf>
```

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# Directives

Directives allow fine-tuning not supported by Markdown itself.

- Content

- `paginate`: Show page number on a slide. `true` or `false`.
- `header`: The content to display at the top of a slide. String containing Markdown that renders to the HTML `<header>` element.
- `footer`: The content to display at the bottom of a slide. String containing Markdown that renders to the HTML `<footer>` element.



# Directives

Directives allow fine-tuning not supported by Markdown itself.

- Appearance

- `class`: Modifies the `class` property of the HTML `<section>` element a slide renders to. String.
- `backgroundColor`, `backgroundImage`, `backgroundPosition`, `backgroundRepeat`, `backgroundSize`: Set the background<sup>1</sup> of the `<section>` element a slide renders to. Each a CSS property value.
- `color`: Adjust the text color<sup>2</sup> of a slide. CSS property value.
- `style` Tweak theme with CSS. Renders to the HTML `<style>` element. CSS String.

---

1: <https://developer.mozilla.org/en-US/docs/Web/CSS/background-image>

2: <https://developer.mozilla.org/en-US/docs/Web/CSS/color>

# Directives

To *globally* set the value of a directive, include it as part of the *YAML front-matter*, at the very beginning of the Markdown file.

```
---
paginate: true
header: This is the **Header**
footer: This is the **Footer**
backgroundColor: rgba(255, 255, 128, .5)
---
```

---

Read more at: <https://marpit.marp.app/directives>



# Directives

To set the value of a directive for *the defined page and following pages*, include it within an HTML comment on that page.

```
<!--  
backgroundColor: rgba(255, 128, 255, .5)  
-->
```

---

Read more at: <https://marpit.marp.app/directives>



# Directives


To set the value of a directive for *the defined page only*, include it within an HTML comment on that page, but with a `_` in front of each directive.

```
<!--  
_backgroundColor: rgba(255, 128, 255, .5)  
-->
```

Read more at: <https://marpit.marp.app/directives>



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# Typesetting Math

Render inline math such as  $ax^2+bc+c$ .


Render inline math such as  $ax^2 + bc + c$ .

Render block math such as:

```
$$  
f(x) = \int_{-\infty}^{\infty} \hat{f}(\xi) e^{2\pi i \xi x} d\xi  
$$
```

$$f(x) = \int_{-\infty}^{\infty} \hat{f}(\xi) e^{2\pi i \xi x} d\xi$$

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# Inserting Footnotes

It is possible to render blockquotes as footnotes<sup>1</sup>:

```
---
style: |
  blockquote {
    border-top: 0.1em dashed #555;
    font-size: 60%;
    margin-top: auto;
  }
---
```


Add footnotes using `> 1: https://www.google.com` and cite using `^1$`.

---

1: <https://github.com/marp-team/marp/discussions/150>



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# Inserting Images and Backgrounds

There are two types of images in Marp:

- Inline Images
- Background Images

# Inserting Images and Backgrounds

Inline images are directly inserted into the slide. They can be resized using `width` and `height`:

```
![width:768px 480px](images/I_Hate_Beamer.png)
```



**I Hate Beamer**

Victor Sanches Portella

UDLS @ UBC CS

September 22, 2021

# Inserting Images and Backgrounds

To be able to center them, add this<sup>1</sup>:

```
---
style: |
  img[alt~="center"] {
    display: block;
    margin: 0 auto;
  }
---
```

This allows you to use `center` to center inline images.

```
![width:768px 480px center](images/I_Hate_Beamer.png)
```

---

1: <https://github.com/marp-team/marpit/issues/141>

# Inserting Images and Backgrounds

Compared with inline images, background images are much more interesting. Not only can you use them to set an image as the background of a slide:

```
![bg contain](https://fakeimg.pl/800x600/0288d1/fff/?text=A)
```

- `contain` scales the image to fit within the slide. ➡
- `cover` scales the image to fill the slide.

# Inserting Images and Backgrounds

Compared with inline images, background images are much more interesting. Not only can you use them to set an image as the background of a slide:

```
![bg cover](https://fakeimg.pl/800x600/0288d1/fff/?text=A)
```

- `contain` scales the image to fit within the slide.
- `cover` scales the image to fill the slide. ➡

# Inserting Images and Backgrounds

you can also use this as a feature to stack multiple pictures horizontally:

```
![bg contain](https://fakeimg.pl/800x600/0288d1/fff/?text=A)  
![bg contain](https://fakeimg.pl/800x600/02669d/fff/?text=B)
```

- `contain` scales the image to fit within the slide. ➡
- `cover` scales the image to fill the slide.

# Inserting Images and Backgrounds

or vertically:

A

```
![bg cover vertical](https://fakeimg.pl/800x600/0288d1/fff/?text=A)  
![bg cover vertical](https://fakeimg.pl/800x600/02669d/fff/?text=B)
```

- `contain` scales the image to fit within the slide.
- `cover` scales the image to fill the slide. ➡

B



# Inserting Images and



You can also use `bg` with `left:<percentage>` or `right:<percentage>` to split the slide into a picture section and a text section:

```
![bg left:50% contain](https://fakeimg.pl/800x600/0288d1/fff/?text=A)
```

- `contain` scales the image to fit within the slide. ➡
- `cover` scales the image to fill the slide.

# Inserting Images and

You can also use `bg` with `left:<percentage>` or `right:<percentage>` to split the slide into a picture section and a text section:

```
![bg right:50% cover](https://fakeimg.pl/800x600/0288d1/fff/?text=A)
```

- `contain` scales the image to fit within the slide.
- `cover` scales the image to fill the slide. ➡



## Inserting Images and

In this setting, we can also stack multiple pictures horizontally:

```
![bg left:50% contain](https://fakeimg.pl/800x600/0288d1/fff/?text=A)  
![bg left:50% contain](https://fakeimg.pl/800x600/02669d/fff/?text=B)
```



- `contain` scales the image to fit within the slide. ➡
- `cover` scales the image to fill the slide.

# Inserting Images and

or vertically:

```
![bg right:50% cover vertical](https://fakeimg.pl/800x600/0288d1/fff/?text=A)  
![bg right:50% cover vertical](https://fakeimg.pl/800x600/02669d/fff/?text=B)
```

- `contain` scales the image to fit within the slide.
- `cover` scales the image to fill the slide. ➡

A

B

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# Title Presentation

Name speaker | Place



Discover the world at Leiden University

1

## コードブロック

```
import torch
print(torch.cuda.is_available())
```

こんな感じでコードブロックを書くことができる。

```
from transformers import AutoModelForMaskedLM, AutoTokenizer
model = AutoModelForMaskedLM.from_pretrained("cl-tohoku/bert-base-japanese-whole-word-masking")
tokenizer = AutoTokenizer.from_pretrained("cl-tohoku/bert-base-japanese-whole-word-masking")

inputs = tokenizer.encode_plus("私はとても[MASK]です。", return_tensors='pt')
outputs = model(**inputs)
tokenizer.convert_ids_to_tokens(outputs.logits[0][1:-1].argmax(axis=-1))
```

横幅は自動調整される（ドキュメントの[Auto-scaling](#)を参照）。

## Using Themes

- Lots of themes! <sup>1</sup>
- Also easy to modify one or create your own.
  - Vanilla CSS
  - No LaTeX Black Magic!

```
header {
  background-color: #800000;
  color: #fff;
  font-size: 1em;
  font-weight: 700;
}
```

1: <https://github.com/topics/marp-themes> 38/40

# Using Themes

## Themes

1. Clone the theme repository.

2. Create your presentation.

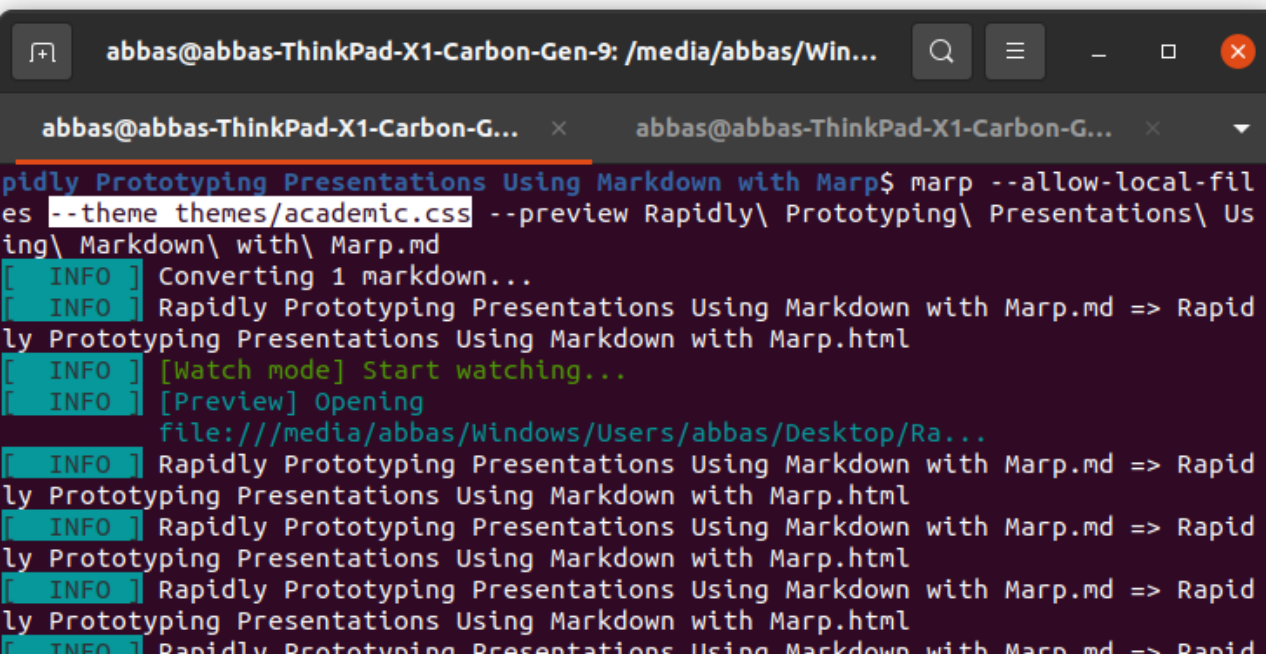
3. Place the CSS file within the repository, and invoke `marp` with

```
marp --allow-local-files --theme <CSS file> <rest of the command>
```

1. Clone the theme repository.

2. Find the CSS file.

3. `marp --allow-local-files --  
theme <CSS file> <rest of the  
command>`



```
abbas@abbas-ThinkPad-X1-Carbon-Gen-9: /media/abbas/Win...
abbas@abbas-ThinkPad-X1-Carbon-G... x abbas@abbas-ThinkPad-X1-Carbon-G... x
Rapidly Prototyping Presentations Using Markdown with Marp$ marp --allow-local-fil
es --theme themes/academic.css --preview Rapidly\ Prototyping\ Presentations\ Us
ing\ Markdown\ with\ Marp.md
[ INFO ] Converting 1 markdown...
[ INFO ] Rapidly Prototyping Presentations Using Markdown with Marp.md => Rapid
ly Prototyping Presentations Using Markdown with Marp.html
[ INFO ] [Watch mode] Start watching...
[ INFO ] [Preview] Opening
file:///media/abbas/Windows/Users/abbas/Desktop/Ra...
[ INFO ] Rapidly Prototyping Presentations Using Markdown with Marp.md => Rapid
ly Prototyping Presentations Using Markdown with Marp.html
[ INFO ] Rapidly Prototyping Presentations Using Markdown with Marp.md => Rapid
ly Prototyping Presentations Using Markdown with Marp.html
[ INFO ] Rapidly Prototyping Presentations Using Markdown with Marp.md => Rapid
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[ INFO ] Rapidly Prototyping Presentations Using Markdown with Marp.md => Rapid
ly Prototyping Presentations Using Markdown with Marp.html
[ INFO ] Rapidly Prototyping Presentations Using Markdown with Marp.md => Rapid
```

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