# The ePIC website development – an overview

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*The ePIC Website Development Meeting*
03/08/2024

# The goal

- The goal of today's meeting is to help you get started with making contributions and modifications of the ePIC website
- This is an iterative process and people will have differing level of proficiency with the tools involved – you are encouraged to ask questions (in e-mail or by any other means)
- There will be follow up meetings – the idea is to keep each of the meets brief, and address various issues as needed

# Overview

- ePIC needs an efficient website to fulfill its mission
- This is a (considerable) collaborative effort
- We'll review the technology background, and proceed to the conventions and the workflow
- A word of encouragement – it's not too difficult and I'm here to help

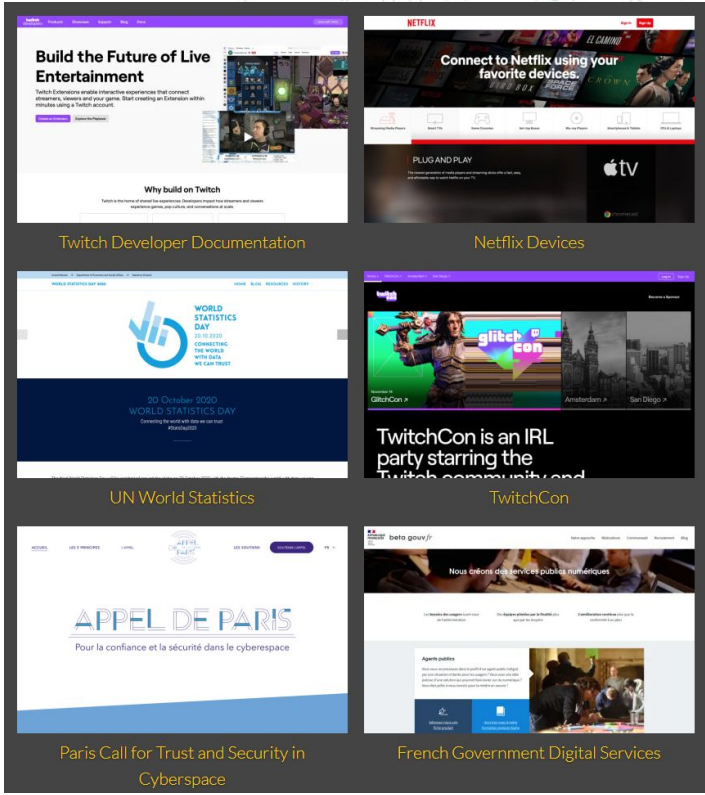
# The technology choice

- Simplicity of the website long term maintenance is an important factor in this decision. This reduces the appeal of PHP-based applications with a DB backend, such as Wikis and Drupal. Examples:
  - PHENIX was effectively offline for many months due to PHP cybersecurity issues
  - There has been a very real security breach of the ATHENA Wiki, had to rebuild
  - Maintenance of the legacy EICUG website (Drupal) proved a challenge due to compatibility matrix of the application modules vs PHP versions – which keep evolving due to cybersecurity and other concerns. Customizations can be quite difficult to carry forward, as experienced by STAR.
- The HEP/NP and EIC communities have a positive experience with other solutions, cf websites like

  https://www.eicug.org/ https://hepsoftwarefoundation.org/

# The “static website generator”

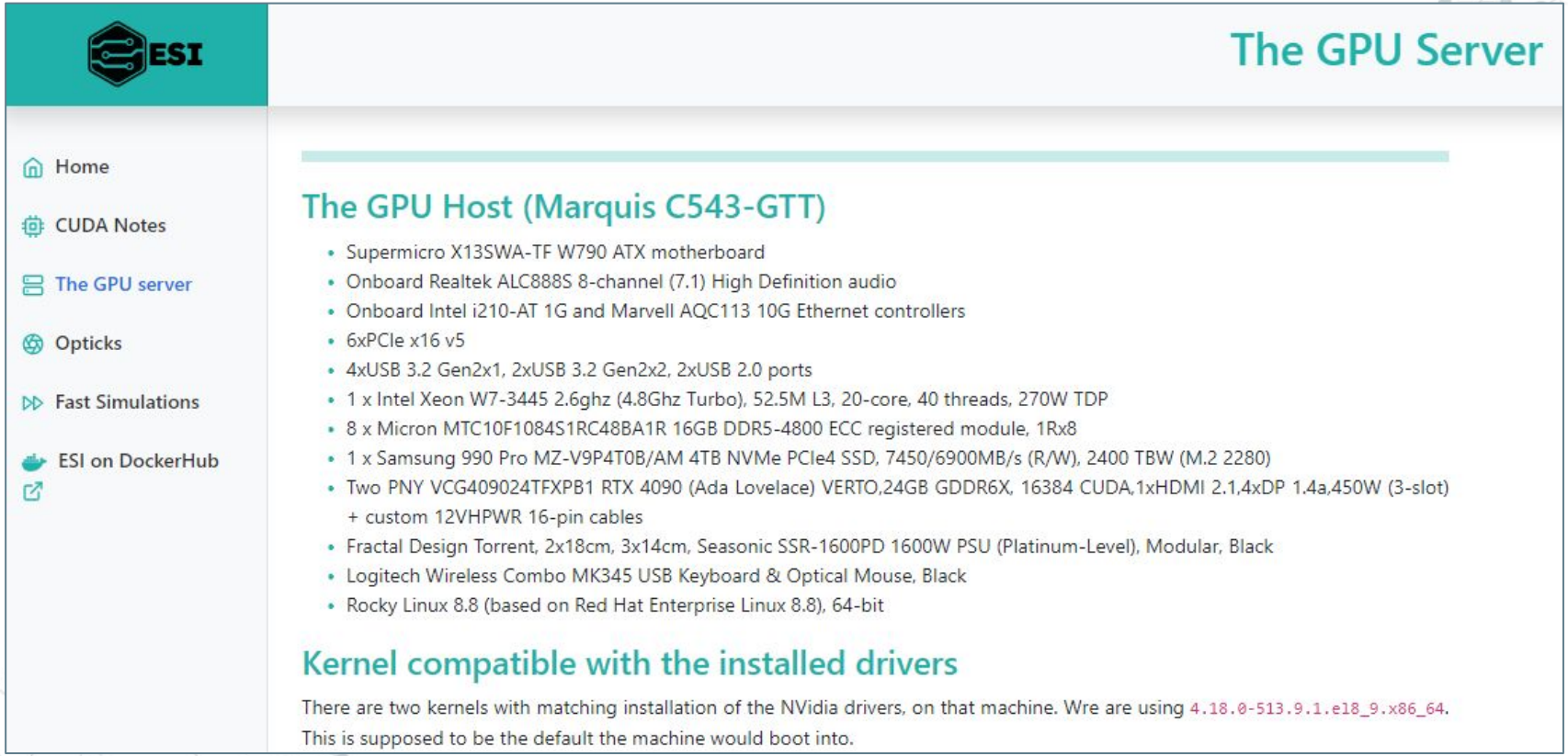
- Jekyll: the “static website generator” technology
  - …meaning: HTML is generated automatically from the users’ material and deployed on a web server
- Well established in industry — mainstream acceptance
- Based on the easy-to-use and familiar Markdown text format (cf. README on GitHub)
- Existing experience in the EIC community, HEP/NP etc
- Motivation
  - Security (static material is easy to secure)
  - Speed (static material is fast to serve)
  - Information protection (version control and access control such as implemented on GitHub)
  - From experience — great for long-term maintenance, no need to update PHP or the DB server versions



# Example of a Markdown source

```
---
title: "The GPU Server"
layout: base5
name: hardware
---

#### The GPU Host (Marquis C543-GTT)

* Supermicro X13SWA-TF W790 ATX motherboard
* Onboard Realtek ALC888S 8-channel (7.1) High Definition audio
* Onboard Intel i210-AT 1G and Marvell AQC113 10G Ethernet controllers
* 6xPCIe x16 v5
…
```

# The rendered page



# How it works

- The “layout” (mentioned on top) is essentially a template which hides the complexity of HTML and styling from the user. All you need to edit is text, in most simple cases. Any editor will work.
- For help with the Markdown syntax, please see helpful documents posted by Thomas, in this agenda.
- To validate your edits, you optimally need to run the “Jekyll” software on your computer, which will build the complete website and serve it on your machine, one the port of your choosing.
- Once committed to GitHub, the latter will do this work for you (for free) and will render the complete website for anyone to browse, e.g.

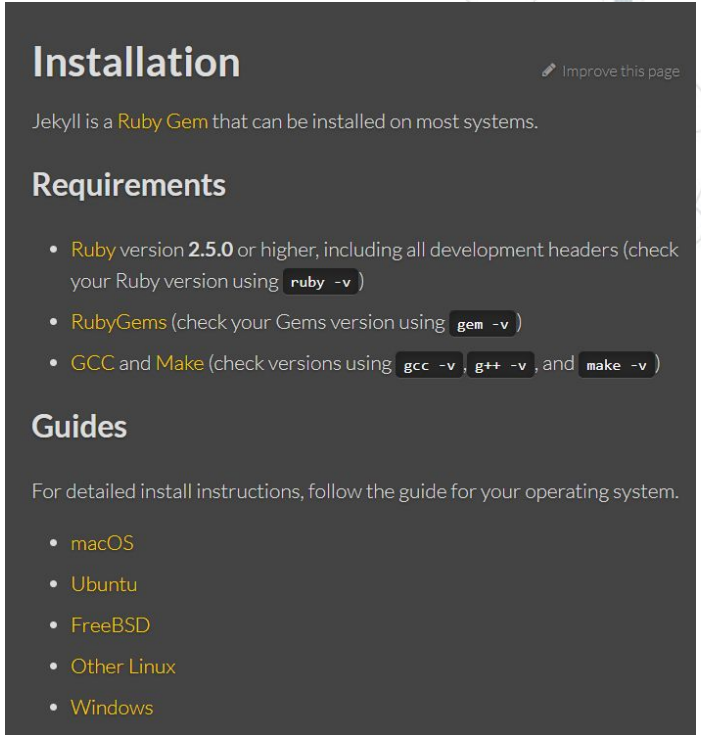
  https://eic.github.io/epic.github.io/

# Jekyll

- The main website with helpful information: https://jekyllrb.com/
- From experience, installing Jekyll requires a modest effort – should be doable for anyone. Installation can be done on a variety of platforms.
- Running Jekyll:

  bundle exec jekyll serve --port 8000

- Point your browser to localhost:8000



# The organization of the project materials

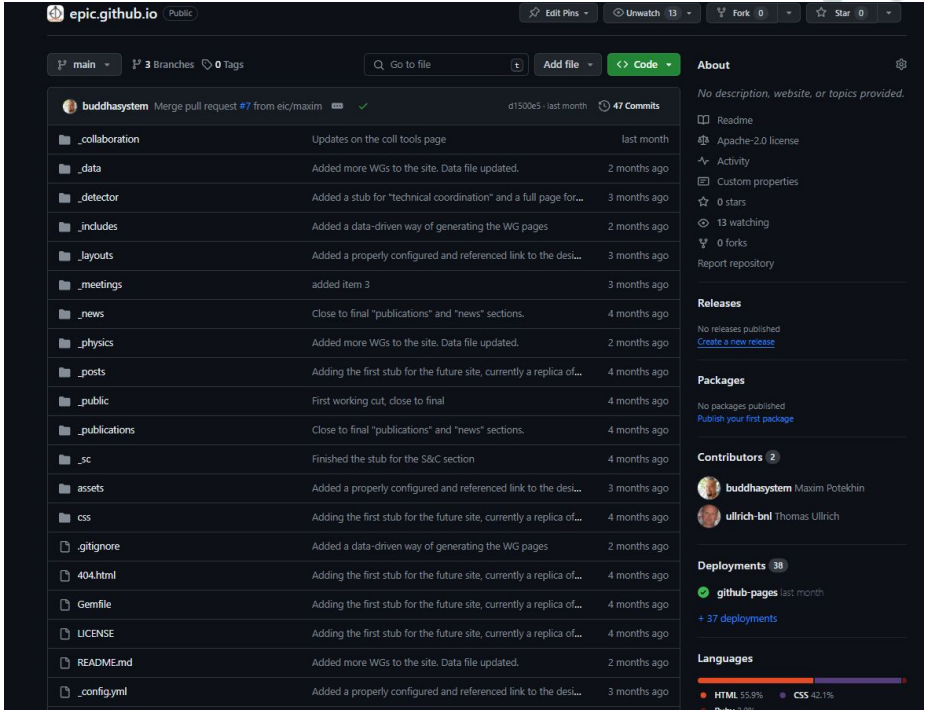
- The layout the files of the site material was designed to minimize the probability of clashes when using a common version control system, which is git in our case. The main menu items correspond to folders.

```
maxim@LPO-168166:~/projects/eic/epic.github.io (maxim)$ ls -1
404.html
apple-touch-icon.png
assets
_collaboration
_config.yml
css
_data
_detector
favicon-16x16.png
favicon-32x32.png
Gemfile
Gemfile.lock
images
_includes
index.html
index-internal.html
_layouts
LICENSE
_meetings
_news
_physics
_posts
_public
_publications
```

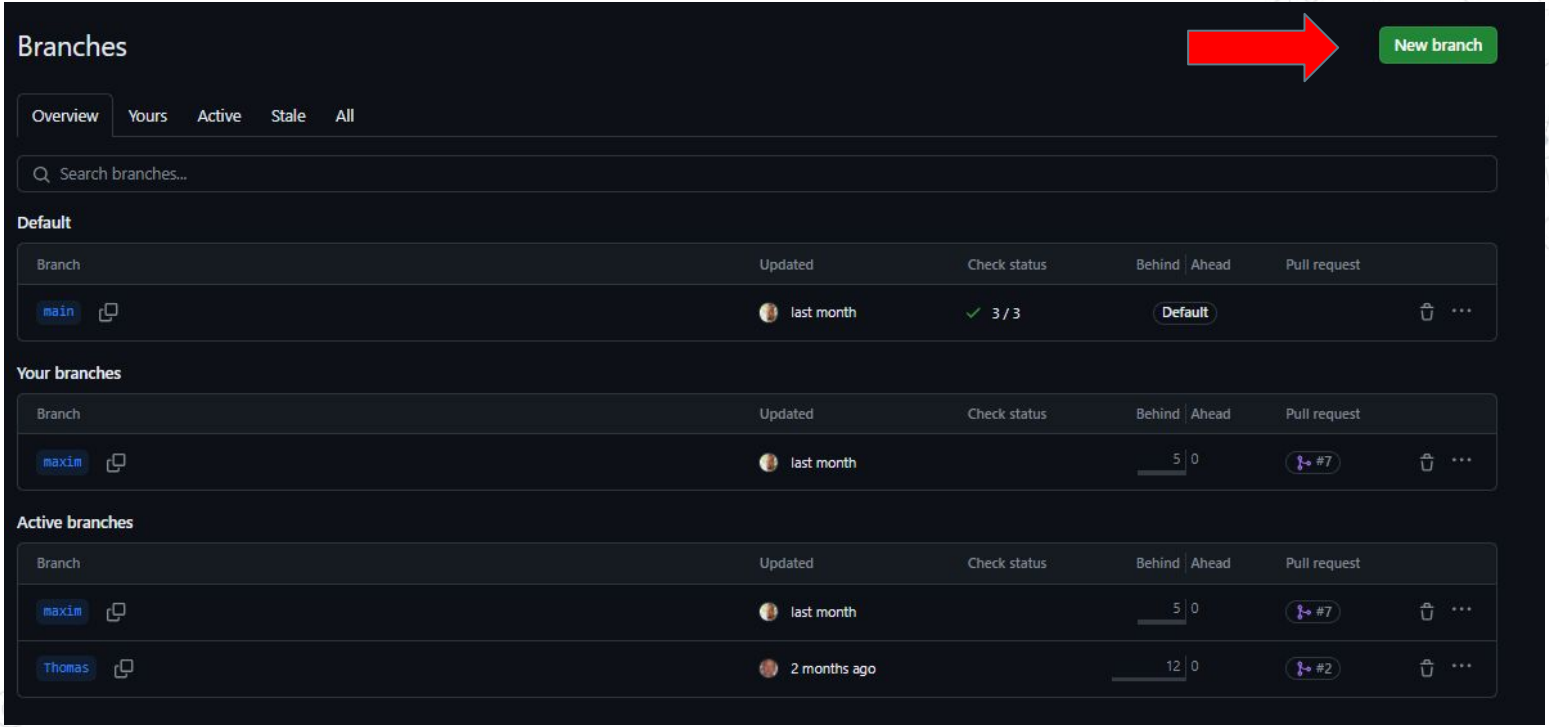
- Each folders contains files, one per item in the dropdown menu
- You will likely be working on one file at a time

# GitHub

- The repo: https://github.com/eic/epic.github.io
- NB: branches



# GitHub branches



# GitHub: the workflow

- All of you are members of the team with “write” access to the repo
- Create a branch of the repo — it might be a good idea to use your name or your GitHub moniker as the name of the branch or its part, to identify active contributors and coordinate work in general
- Clone the repo on your machine
- Checkout the branch
- Edit the files, run Jekyll to check the result
- Commit and push to your branch
- Create a Pull Request so the changes can be reviewed and merged

# GitHub: useful features

- Sophisticated version control, audit trail
- “Issues” – an excellent way to track and manage collaborative development

# Pit stop: questions?

# “Public” and “For Collaborators Only” parts of the site

- By design, there will be (limited) pages on the website which are world-readable, and a protected section which can be accessed only by members with proper authorization
- Implementation of this functionality is deferred until the content is mature and we are ready to deploy. For now, we do have both sections on the prototype website and they are visible to all.
- An example of the “internal” page which will eventually be protected: https://eic.github.io/epic.github.io/detector/dsc.html

# Documents

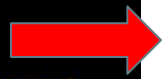
- There will be (naturally) many documents of various types, made available to the visitors of the website
- It is not a good practice to store PDF files or any other type of files of non-trivial sizes as part of the site content (i.e. files in the repo) – it won't scale and will impact the performance of git and GitHub, plus there are limits on storage on GitHub which can be reached quickly
- For these reasons, it is recommended that the files are stored externally, e.g. on the InvenioRDM instance being commissioned at BNL, Google Drive, Dropbox etc
- Exceptions to this rule: diagrams and plots which are integral to the web pages on the website

# Advanced topics

- Jekyll has the ability parse a layout language called Liquid, which in turn can process files formatted in YAML or CVS
- This effectively gives the website a database-like capability, because various selection criteria and other operations (including those on multiple files) can be applied to the data as the page is being rendered
- This is an extremely powerful feature which avoids hardcoding tables etc in HTML, and allows many parts of the website reliably reference same data
- We will address this feature in one of our follow-up meetings, for now let's look at a simple example on the PHENIX website (next slide)

# Example of a YAML data component rendering(PHENIX)

```yaml
# 2024

- name: wwnd24
  title: 'The 39th Winter Workshop on Nuclear Dynamics (2024)'
  url: 'https://indico.cern.ch/event/1345629/'
  year: 2024

# 2023

- name: zs23
  title: 'Zimanyi School 2023'
  url: 'http://zimanyischool.kfki.hu/23/'
  year: 2023

- name: pic23
  title: 'International Symposium on Physics in Collision 2023'
  url: 'https://indico.cern.ch/event/1190468/'
  year: 2023

- name: spin23
  title: 'Spin 2023'
  url: 'https://indico.jlab.org/event/663/'
  year: 2023

- name: qm23
  title: 'Quark Matter 2023'
  url: 'https://indico.cern.ch/event/1139644/'
  year: 2023

- name: lomcon23
  title: 'Lomonosov Conference (2023)'
  url: 'https://lomcon.ru/'
  year: 2023

- name: ismd23
  title: 'International Symposium on Multiparticle Dynamics (2023)'
  url: 'https://indico.cern.ch/event/1258038/'
  year: 2023
```



## Conference Presentations by PHENIX Members

The tables below contain three columns:

- Conference title, which is also a link to the conference webpage
- PHENIX presentations committed to Zenodo (as a link to the relevant Zenodo query page)
- The official list of PHENIX authors approved for this specific conference (optional)

### 2024

| | |
|---|---|
| The 39th Winter Workshop on Nuclear Dynamics (2024) | Presentations |

### 2023

| | |
|---|---|
| 19th International Workshop on Hadron Structure and Spectroscopy | Presentations |
| Adding Value (to) and Preserving Scientific and Technical Data (2023) | Presentations |
| Deep Inelastic Scattering (2023) | Presentations |
| Hard Probes 2023 | Presentations |
| High Energy Physics in the LHC Era (HEPChile) 2023 | Presentations |
| Initial Stages 2023 | Presentations |
| International Conference on New Frontiers in Physics 2023 | Presentations |
| International Symposium on Multiparticle Dynamics (2023) | Presentations |
| International Symposium on Physics in Collision 2023 | Presentations |
| Lake Louise Winter Institute 2023 | Presentations |
| Lomonosov Conference (2023) | Presentations |
| Quark Matter 2023 | Presentations |
| RHIC & AGS Annual Users Meeting (2023) | Presentations |
| Rencontres de Moriond 2023 | Presentations |
| Spin 2023 | Presentations |
| The 38th Winter Workshop on Nuclear Dynamics (2023) | Presentations |
| Zimanyi School 2023 | Presentations |

# Deployment

- At this time, we develop, test and validate the content using the free hosting feature of GitHub, the “GitHub pages”
- This is temporary situation
- Going forward, the website will be deployed on a proper Web server hosted at one of the labs
- Auth/auth issues will be resolved at that time
- Thanks to the technology used, deployment can be as simple as copying a directory tree from one location to another – the site is just a collection of files after all

# Summary

- We will be using git/GitHub for this team effort
- Getting comfortable with GitHub (branches, PRs etc) is a prerequisite, however that is the case with using all of the ePIC software so it's not an extra hurdle
- Installing and running Jekyll on your machine may present a modest investment of effort but it's doable and in the end well worth it
- I'm always available to help
- Start, experiment, provide feedback, ask for help!