Publishing

Session 6

Mickaël CANOUIL, *Ph.D.*

pro@mickael.canouil.dev

Independent Contractor

Saturday, the 7th of February, 2026

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- Session 6: Publishing
- Session Objectives
- Learning Objectives

Session Overview

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Session 6: Publishing

- **Publishing Options Overview**
  - Comparison of Quarto Pub, GitHub Pages, Netlify, and other hosting services.
  - Understanding benefits and limitations of each platform.
  - Choosing the right publishing method for different use cases.
- **Code Execution Strategies**
  - Local execution with freeze vs CI execution.
  - Environment management and dependency handling.
  - Version control best practices for published projects.
- **Quarto Pub and GitHub Pages**
  - Step-by-step Quarto Pub deployment workflow.
  - Three methods for GitHub Pages: docs folder, quarto publish, and GitHub Actions.
  - Understanding `_publish.yml` and repository configuration.
- **Advanced Topics**
  - Custom domains configuration.
  - Automated deployment workflows.
  - Troubleshooting common publishing issues.

Session Objectives

This session explores comprehensive publishing strategies for Quarto projects, covering multiple deployment platforms, automation workflows, and best practices for different use cases.

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Learning Objectives

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By the end of this session, participants will be able to:

- Choose the right publishing method for your use case.
- Deploy a Quarto project to multiple platforms.
- Set up automated publishing workflows.
- Troubleshoot common publishing issues.
- Configure custom domains and advanced features.

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Learning Objectives

By the end of this session, participants will be able to:

- Choose the right publishing method for your use case.
- Deploy a Quarto project to multiple platforms.
- Set up automated publishing workflows.
- Troubleshoot common publishing issues.
- Configure custom domains and advanced features.
- Distribute extensions via GitHub or archives.

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- Publishing Options Overview

Quarto Publishing

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Publishing Options Overview

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Publishing Options Overview

Service	Best For	Key Features
Quarto Pub	Public content, getting started	Free, simple, 100MB limit
GitHub Pages	Open source projects	Git integration, custom domains
Netlify	Professional sites	Advanced features, previews
Posit Connect	Enterprise/organisations	Security, authentication
Other Services	Custom requirements	Firebase, S3, self-hosted

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Rule of thumb

Start with Quarto Pub for learning, use GitHub Pages for projects, Netlify for production sites

- Your First Quarto Pub Deployment
- Understanding _publish.yml

Quarto Pub

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Your First Quarto Pub Deployment

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1. Create an account.

   Visit quartopub.com and sign up.

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```
quarto publish quarto-pub
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3. Authenticate.
   - Browser opens for authorization
   - Confirm publishing permissions
   - Site deploys automatically!

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Your First Quarto Pub Deployment

1. Create an account.
   Visit quartopub.com and sign up.

2. Publish from CLI.

```bash
quarto publish quarto-pub
```

3. Authenticate.
   - Browser opens for authorization
   - Confirm publishing permissions
   - Site deploys automatically!

That's it!

Your site is live at `https://username.quarto.pub/project-name`.

Understanding `_publish.yml`

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Created automatically when you first publish:

_publish.yml

```yaml
- source: project
  quarto-pub:
    - id: "abc123-def456-ghi789"
      url: "https://myusername.quarto.pub/myproject"
```

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- **Safe for version control** (no credentials).

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- **Shareable** across team members.

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- **Service configuration** stored locally.

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- **Safe for version control** (no credentials).
- **Shareable** across team members.
- **Service configuration** stored locally.
- **Reusable** for subsequent deployments.

- Exercise Overview
- Publishing to Quarto Pub
- Success Criteria

Hands-On Exercise: Quarto Pub

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Exercise Overview

Objective: Publish the branded project you created in Session 5 using Quarto Pub.

Example Code (reused from Session 5): Exercises

```bash
tar -xzf "05b-exercises.tar.gz" -C "06-publishing"
```

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Publishing to Quarto Pub

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Publishing to Quarto Pub

1. Create a simple Quarto document.

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4. Share your live URL with a neighbour.

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2. Add some content (text, code, plots).
3. Run `quarto publish quarto-pub`.
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BASH

```bash
# Publish without prompts
quarto publish quarto-pub --no-prompt

# Publish without opening browser
quarto publish quarto-pub --no-browser

# Publish without re-rendering
quarto publish quarto-pub --no-render
```

 |

Success Criteria

You've successfully completed the exercise if you can:

- Successfully publish your Quarto project to Quarto Pub.

GitHub Pages

- Three Ways to Use GitHub Pages
- Method 1: Render to docs/
- Method 2: quarto publish gh-pages
- Method 3: GitHub Actions Workflow

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Three Ways to Use GitHub Pages

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Render to `docs/`

- Simplest approach
- Commit rendered output
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`quarto publish`

- Local rendering
- Automatic deployment
- Clean separation

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Render to `docs/`

- Simplest approach
- Commit rendered output
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GitHub Actions

- Fully automated
- Triggered by commits
- Most professional

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Method 1: Render to `docs/`

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- Configure Output Directory

YAML

```yaml
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project:
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- Add `.nojekyll` File

```bash
touch .nojekyll
```

Method 1: Render to `docs/`

- Configure Output Directory

```yaml
# _quarto.yml
project:
  type: website
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```

- Render and Push

```bash
quarto render
git add .
git commit -m "feat: Add rendered site"
git push
```

- Add `.nojekyll` File

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Method 1: Render to `docs/`

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- Configure Repository

  Settings → Pages → Source: **Deploy from branch** → Branch: **main** → Folder: **/docs**

Method 2: `quarto publish gh-pages`

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Method 2: `quarto publish gh-pages`

- Setup Source Branch

BASH

```bash
# Create gh-pages branch
git checkout --orphan gh-pages
git rm -rf .
git commit --allow-empty -m "chore: Initial gh-pages commit"
git push origin gh-pages
git checkout main
```

 |

Method 2: `quarto publish gh-pages`

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- Configure .gitignore

```txt
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_book/
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- Configure .gitignore

```txt
_site/
_book/
```

- Publish

```bash
quarto publish gh-pages
```

Method 3: GitHub Actions Workflow

- Create Workflow File: `.github/workflows/publish.yml`.

YAML

```yaml
name: Quarto Publish
on:
  workflow_dispatch:
  push:
    branches: main

jobs:
  build-deploy:
    runs-on: ubuntu-latest
    permissions:
      contents: write
    steps:
      - name: Check out repository
        uses: actions/checkout@v4

      - name: Set up Quarto
        uses: quarto-dev/quarto-actions/setup@v2

      - name: Render and Publish
        uses: quarto-dev/quarto-actions/publish@v2
        with:
          target: gh-pages
```

- Exercise Overview
- Publishing to GitHub Pages
- Success Criteria

Hands-On Exercise: GitHub Pages

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Exercise Overview

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Example Code (reused from Session 5): Exercises

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Publishing to GitHub Pages

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Publishing to GitHub Pages

Choose **one** method and deploy your project:

Method 1: docs/ folder

1. Modify `_quarto.yml`.
2. Add `.nojekyll`.
3. Render and push.
4. Configure in GitHub settings.

Method 2: quarto publish

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Publishing to GitHub Pages

Choose **one** method and deploy your project:

Method 1: docs/ folder

1. Modify `_quarto.yml`.
2. Add `.nojekyll`.
3. Render and push.
4. Configure in GitHub settings.

Method 2: quarto publish

1. Setup gh-pages branch.
2. Update `.gitignore`.
3. Run `quarto publish gh-pages`.
4. Verify deployment.

 |

Success Criteria

You've successfully completed the exercise if you can:

- Successfully publish your Quarto project to GitHub Pages using one of the methods.

- The Big Decision: Where to Execute Code?
- Freeze Strategy Implementation
- CI Execution with Dependencies
- Version Control Strategies
- Environment Management

Code Execution Strategies

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The Big Decision: Where to Execute Code?

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Local Execution + Freeze

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  freeze: auto
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Pros:

- Faster CI builds.
- Consistent environment.
- Handle legacy code.

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The Big Decision: Where to Execute Code?

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Cons:

- Manual re-execution needed.
- Larger repository size.

The Big Decision: Where to Execute Code?

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CI Execution

The Big Decision: Where to Execute Code?

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CI Execution

Pros:

- Always fresh execution.
- Smaller repositories.
- Reproducible environments.

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The Big Decision: Where to Execute Code?

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CI Execution

Pros:

- Always fresh execution.
- Smaller repositories.
- Reproducible environments.

Cons:

- Longer build times.
- Dependency management.
- Potential CI failures.

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Freeze Strategy Implementation

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- Enable Freezing

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- Re-render Locally

BASH

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quarto render
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- Re-render Locally

BASH

```bash
quarto render
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- Version Control

BASH

```bash
git add _freeze/
git commit -m "chore: Update frozen computations"
git push
```

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Freeze Strategy Implementation

- Enable Freezing

_quarto.yml

```yaml
execute:
  freeze: auto
```

- Re-render Locally

BASH

```bash
quarto render
```

- Version Control

BASH

```bash
git add _freeze/
git commit -m "chore: Update frozen computations"
git push
```

Important

The `_freeze/` directory stores computational results and **must** be committed to Git.

CI Execution with Dependencies

Python/Jupyter Example | R/Knitr Example

YAML

```yaml
- name: Install Python and Dependencies
  uses: actions/setup-python@v5
  with:
    python-version: '3.13'
    cache: 'pip'

- name: Install Jupyter
  run: pip install jupyter

- name: Install Requirements
  run: pip install -r requirements.txt
```

 |

CI Execution with Dependencies

Python/Jupyter Example | R/Knitr Example

YAML

```yaml
- name: Install R
  uses: r-lib/actions/setup-r@v2
  with:
    r-version: '4.5.0'

- name: Install R Dependencies
  uses: r-lib/actions/setup-renv@v2
  with:
    cache-version: 1
```

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Version Control Strategies

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Version Control Strategies

Use a freeze strategy (*recommended*):

YAML

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execute:
  freeze: auto
```

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Version Control Strategies

Use a freeze strategy (*recommended*):

YAML

```yaml
execute:
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```

Commit to Git:

- Source files (`.qmd`).
- `_freeze/` directory.
- Configuration files.

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Version Control Strategies

Use a freeze strategy (*recommended*):

YAML

```yaml
execute:
  freeze: auto
```

Commit to Git:

- Source files (`.qmd`).
- `_freeze/` directory.
- Configuration files.

Don’t Commit:

- `_site/` , `_book/` , or `_manuscript/` .
- Temporary files.
- Local dependencies.

Environment Management

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Environment Management

Use a tool to manage your R , Python , or Julia environment:

Environment Management

Use a tool to manage your R , Python , or Julia environment:

- `renv` for R.
- `uv`, `pip`, or `conda` for Python.
- `Pkg` for Julia.

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- Custom Domains

Advanced Topics

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Custom Domains

GitHub Pages Custom Domain | Netlify Custom Domain

1. Add `CNAME` file to project root:

```txt
yourdomain.com
```

2. Configure DNS records:
   - **Apex domain:** A records to GitHub IPs.
   - **Subdomain:** CNAME to `username.github.io`.
3. Enable in repository settings.

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Custom Domains

GitHub Pages Custom Domain | Netlify Custom Domain

- Automatic HTTPS.
- Easy DNS management.
- Domain purchasing available.

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- Distribution Methods
- Publishing Best Practices

Extension Distribution

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Distribution Methods

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Distribution Methods

GitHub Distribution (Recommended)

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Distribution Methods

GitHub Distribution (Recommended)

BASH

```bash
# Users install with:
quarto add yourorg/company-report

# Or specific version/tag:
quarto add yourorg/company-report@v1.0.0

# Or from branch:
quarto add yourorg/company-report@main
```

Distribution Methods

GitHub Distribution (Recommended)

BASH

```bash
# Users install with:
quarto add yourorg/company-report

# Or specific version/tag:
quarto add yourorg/company-report@v1.0.0

# Or from branch:
quarto add yourorg/company-report@main
```

Benefits: Version control, easy updates, namespace management (`yourorg/extension`).

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Distribution Methods

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Distribution Methods

Archive Distribution

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Distribution Methods

Archive Distribution

BASH

```bash
# From URL:
quarto add https://example.com/company-report.zip

# From local file:
quarto add ./company-report.tar.gz
```

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Distribution Methods

Archive Distribution

BASH

```bash
# From URL:
quarto add https://example.com/company-report.zip

# From local file:
quarto add ./company-report.tar.gz
```

Benefits: No GitHub required, works offline, controlled distribution.

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Publishing Best Practices

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Prepare your extension:

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Prepare your extension:

1. **Add README.md** - Installation instructions and documentation.

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Prepare your extension:

1. **Add README.md** - Installation instructions and documentation.
2. **Include LICENSE** - Specify usage terms.

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1. **Add README.md** - Installation instructions and documentation.
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3. **Create example.qmd** - Demonstrate usage.

Publishing Best Practices

Prepare your extension:

1. **Add README.md** - Installation instructions and documentation.
2. **Include LICENSE** - Specify usage terms.
3. **Create example.qmd** - Demonstrate usage.
4. **Version with tags** - Use semantic versioning (*e.g.*, `v1.0.0`).

Publishing Best Practices

Prepare your extension:

1. **Add README.md** - Installation instructions and documentation.
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3. **Create example.qmd** - Demonstrate usage.
4. **Version with tags** - Use semantic versioning (*e.g.*, `v1.0.0`).

> **Tip**
>
> See Distributing Extensions for complete details.

Mickaël CANOUIL, *Ph.D.*

Independent Contractor

pro@mickael.canouil.dev

Website	GitHub	LinkedIn	Bluesky	Mastodon
mickael.canouil.fr	@mcanouil	MickaelCanouil	@mickael.canouil.fr	@MickaelCanouil

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