2025

4Geeks Academy: data science cohort 12

DAY 32: ML APP DEPLOYMENT CONT'D

TODO

ML APP DEPLOYMENT

Web app frameworks, where to deploy

DEPLOY

Deploy movie recommendation system web app to Render

TOPICS

01 WEB APP FRAMEWORKS

02 WHERE TO DEPLOY

WEB APP FRAMEWORKS

- **Full control & flexibility**: Custom HTML/CSS/JS and complex routing
- **Steeper learning curve:** Knowledge of web development and front-end technologies
- **Production-ready:** Extensive deployment options and scalability features
- **Best for:** Complex applications, custom UI, integration with existing web infrastructure

- **Rapid prototyping**: Turn Python scripts into web apps with minimal code changes
- **Data science focused**: Built-in widgets for plots, dataframes and file uploads
- **Automatic reactivity**: App reruns when inputs change, no manual state management
- **Best for:** Data dashboards, analysis tools, sharing data insights

- **ML model deployment**: Specifically designed for creating ML model interfaces
- **Minimal setup**: Generate web interfaces with just a few lines of code
- **Built-in ML features:** Handles common ML input/output types (images, audio, text)
- **Best for:** Quick model demos, sharing ML models with non-technical users

WHERE TO DEPLOY

- **Multi-framework support:** Works with Flask, Streamlit, and Gradio apps
- **Easy deployment:** Git-based deployment with automatic builds
- **Good free tier:** Includes databases, background workers, and custom domains
- **Great for:** Production Flask apps, Streamlit dashboards that need custom domains

- **Native integration:** Deployment directly from GitHub repos with zero configuration
- **Free tier available:** Good for personal projects and prototypes
- **Streamlit-optimized:** Handles Streamlit-specific requirements automatically
- **Limitations:** Only supports Streamlit apps, limited customization options

- **ML-focused community:** Perfect discoverability for ML demos and models
- **Gradio/Streamlit optimized:** Built specifically for these frameworks
- **ML performance:** More CPU/RAM than others +limited GPU inference at no cost
- **Best for:** Sharing ML models publicly, building portfolio of ML demos, reaching ML community