Atri Labs

# Building a full-stack web development framework

**Darshita Chaturvedi**

Co-Founder & CEO, Atri Labs

**Women Who Code Frontend**

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**About Me**

- **Maintainer of Atri engine, and Co-Founder & CEO of Atri Labs**

  Creating a new full-stack web development framework

- **Previously, Graduate Research Assistant at MIT and Quant Researcher at BlackRock**

  Experiences in academia and quantitative finance industry

- **Editor of novels written by my grandfather over the last 50 years**

  Favorite past times: painting and learning art history

# Outline

# Atri Framework

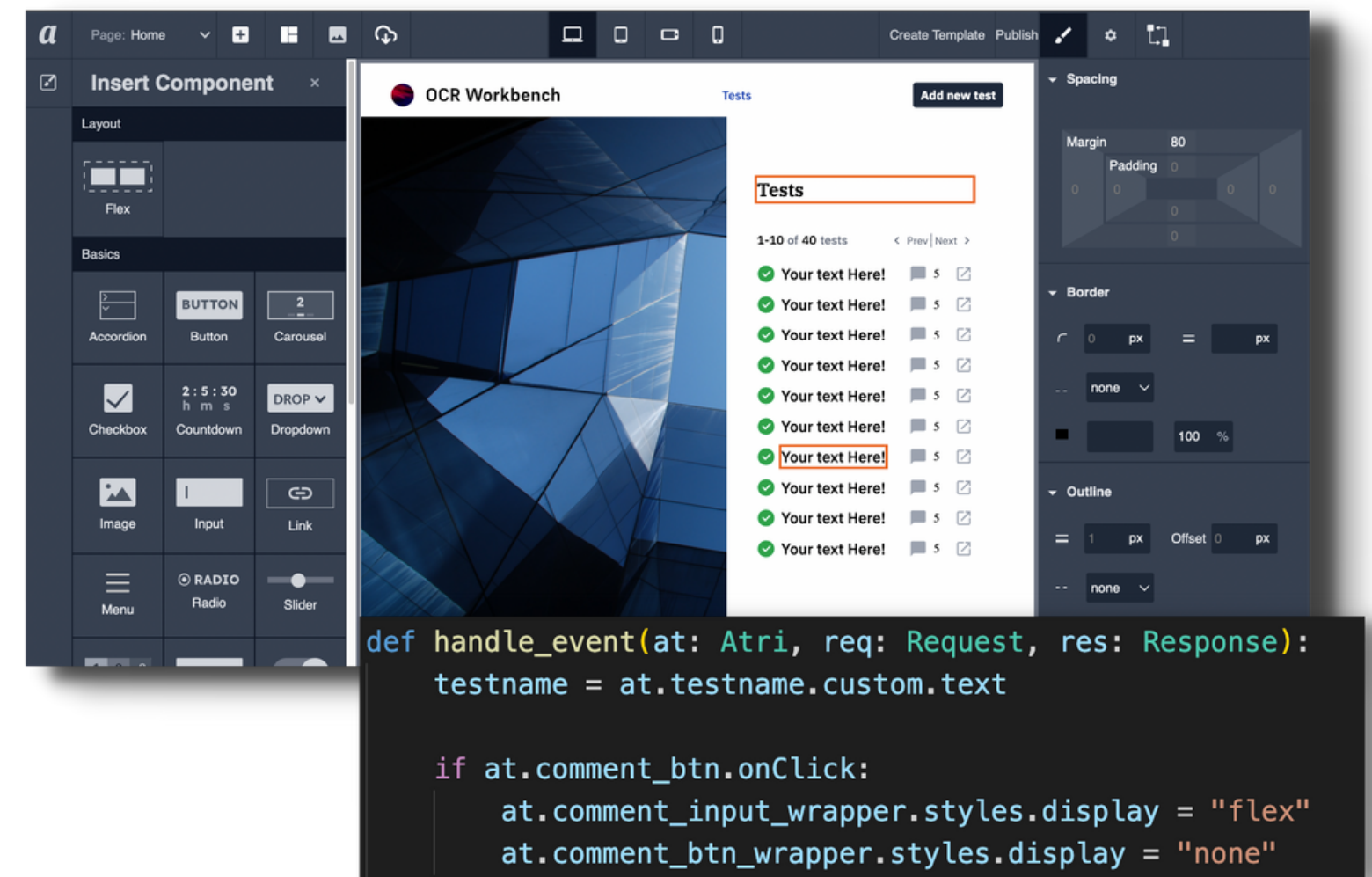- **Full-stack web development framework**

  Create frontend visually and write backend in Python; request-response model is provided by default.

- **Free and open-source**

  Clone existing apps or create one from scratch

- **General purpose**

  Ecommerce websites to Machine Learning internal apps

# What makes it unique?

- **Extends beyond JS world**

  Write backend in Python, NodeJS, etc.

- **No need to create and manage REST APIs**

  Request-response model can be directly modified

- **Productivity tools**

  Visual editor, asset management tools

- **Compliance-ready**

  Object model prevents breaches

# Extend web development to the entire product team

# What have we learned?

# Journey of developing a framework

**Understand tools**     **Understand past and future of JS**     **Design**     **Decide your bundler & transpiler**     **Develop**

# Tools

- Typescript **Compiler** (tsc)
- **Linters** like eslint
- **Bundlers** for generating final assets (webpack, swc, esbuild)
- **Transpilers** for codemods (Babel)
- **Formatters** for prettifying the code (prettier)

# Javascript Syntax

- Javascript has a very rapidly changing spec for syntax
- It has many module systems such as AMD, UMD, CommonJS, and recently the browser-supported module type

# Decide your bundler

- Toughest decision
- Requirements of the framework, the skillset of the team, etc
  - For fast build - use esbuild, swc
  - For advanced codemods - use build tool that exposes AST. Babel does, esbuild does not.
  - esbuild ignores type in typescript
  - Might have to learn Rust or Go

# Atri Framework uses Webpack with Babel

- Resources such as manifest schemas, manifest, and plugins refer to each other
- For example, a manifest has to refer to a manifest schema for runtime type checking
- Improved developer experience
  - Using webpack's resource query feature

```
const reactSchemaId = "@atrilabs/react-component-manifest-schema";
```

```
import reactSchemaId from "@atrilabs/react-component-manifest-schema?id";
```

# Where do we start?

**create-react-app repository**

The best starting point

**NextJS repository**

Not necessary, but a good resource

# Packages in create-react-app

## Packages for building CRA

- react-scripts
- react-dev-utils

## Packges for configuring tools

- babel-preset-react-app
- babel-plugin-named-asset-import
- eslint-config-react-app

## Packages for generating template

- create-react-app
- cra-template
- cra-template-typescript

# How to contribute to any open-source project?

# Thank you
# for listening!

**Darshita Chaturvedi**

**@darshitac_**

https://github.com/Atri-Labs/atrilabs-engine