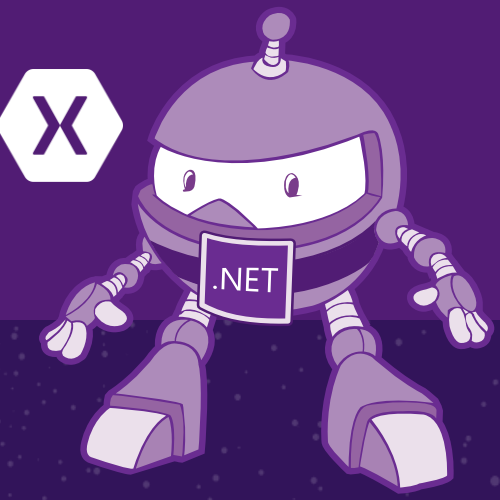
.NET Conf
"Focus on Xamarin"
.NET
focus.dotnetconf.net

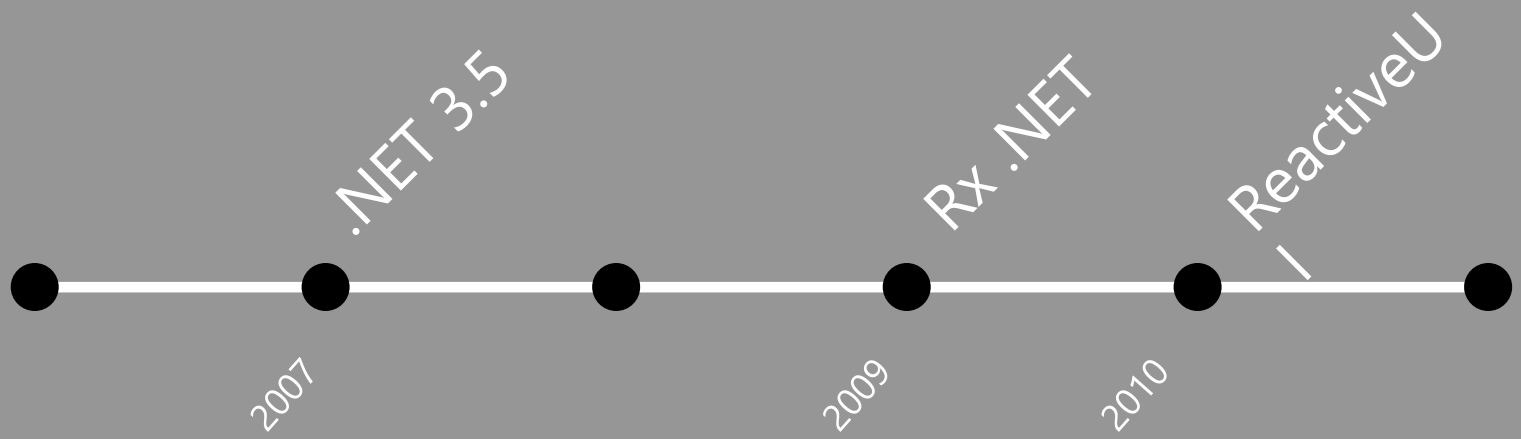
Go Reactive with Reactive Extensions and ReactiveUI

Rodney Littles, II



I’m Rodney

Twitter - https://twitter.com/rlittlesii
Twitch - https://www.twitch.tv/rlittlesii/
GitHub – https://github.com/RLittlesII


.NET 3.5
Rx .NET
ReactiveUI
2007
2009
2010

```
public interface IObserver<in T>
{
    void OnCompleted();
    void OnError(Exception error);
    void OnNext(T value);
}
```

```
public interface IObservable<out T>
{
    IDisposable Subscribe(IObserver<T> observer);
}
```

```
public interface IEnumerator
{
    object Current { get; }
    bool MoveNext();
    void Reset();
}
```

```
public interface IEnumerable<out T>
{
    IEnumerator<T> GetEnumerator();
}
```

!=

Conveyor Belt

What's this got to do with Xamarin and Mobile?

- Respond to Events
- Avoid Memory Leaks
- Asynchronously load data
- Handle disconnected state

Have you ever seen ...

```
SearchBar.TextChanged += (sender, args) => { };
```

Leads to …

What If ...

```
textChangedEvents
    .Throttle(TimeSpan.FromMilliseconds(750), RxApp.TaskpoolScheduler)
    .Select(x => x.NewTextValue.Trim())
    .DistinctUntilChanged()
    .Where(x => !string.IsNullOrWhiteSpace(x))
    .ObserveOn(RxApp.MainThreadScheduler)
    .InvokeCommand(this, x => x.ViewModel.Search)
    .DisposeWith(ViewBindings);
```

Demo intro slide

.NET

Observables

- Are
  - Asynchronous
  - Awaitable
  - Disposable
- They
  - Return an IDisposable
  - Allow you to batch disposal
  - Dispose of handlers when disposed

How many times have you …

- Loaded data asynchronously?
- Loaded data when the Page/ViewModel is created?
- Loaded a ListView with data?

Demo intro slide

.NET

.NET Foundation

ReactiveUI is part of the .NET Foundation. Other projects that are associated with the foundation include the Microsoft .NET Compiler Platform ("Roslyn") as well as the Microsoft ASP.NET family of projects, Microsoft .NET Core & Xamarin Forms.

Core Team

Glenn Watson Melbourne, Australia	Rodney Littles II Texas, USA	Artyom Gorchakov Moscow, Russia	Colt Bauman South Korea

Alumni Core Team

The following have been core team members in the past.

Geoffrey Huntley Sydney, Australia	Kent Boogaart Brisbane, Australia	Olly Levett London, United Kingdom	Anaïs Betts San Francisco, USA	Brendan Forster Melbourne, Australia	Claire Novotny New York, USA

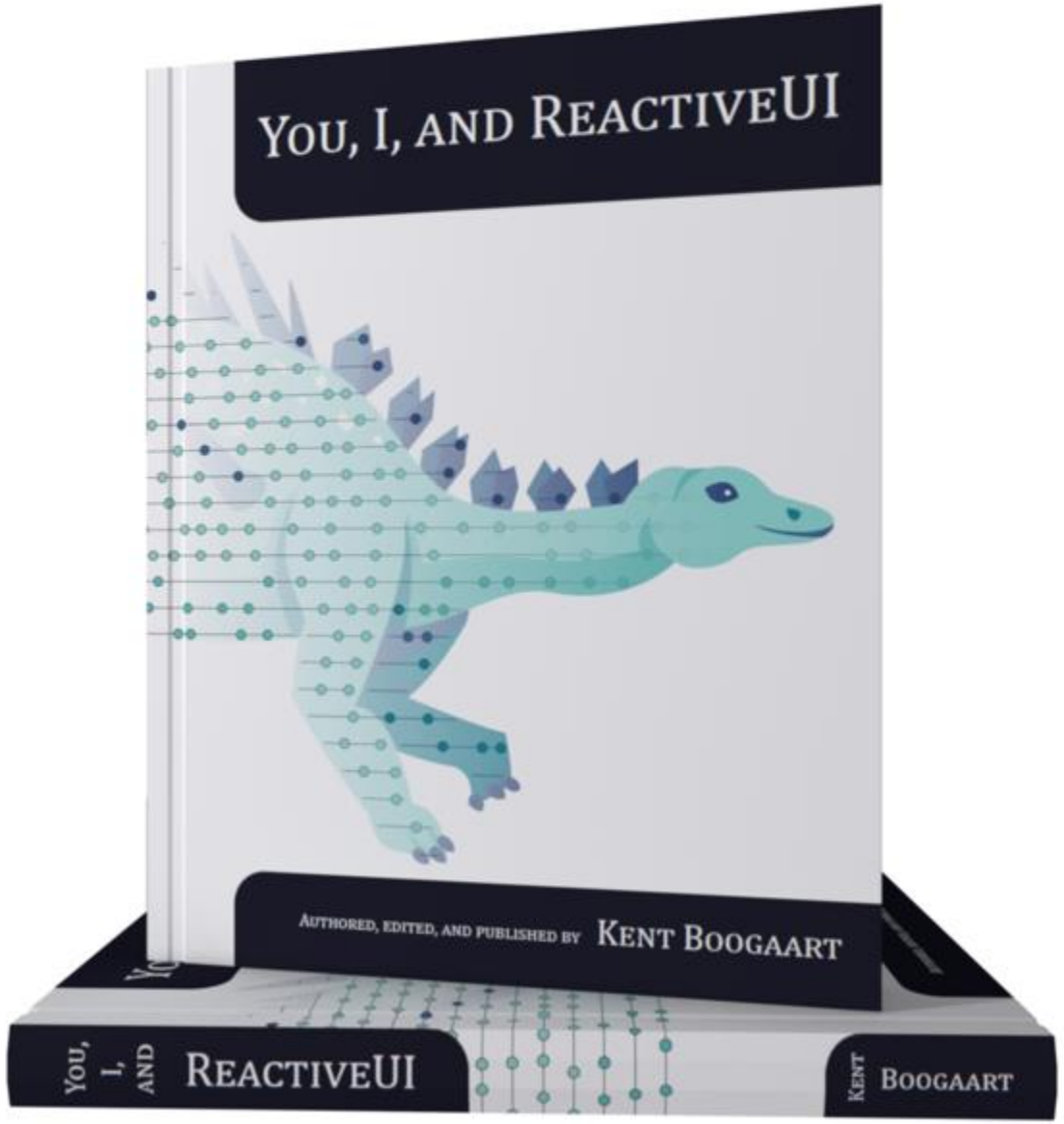
NuGet Packages

Install the following packages to start building your own ReactiveUI app. **Note:** some of the platform-specific packages are required. This means your app won't perform as expected until you install the packages properly. See the Installation docs page for more info.

Platform	ReactiveUI Package	NuGet	Events Package
.NET Standard	ReactiveUI	nuget v11.2.3	None
	ReactiveUI.Fody	nuget v11.2.3	None
Unit Testing	ReactiveUI.Testing	nuget v11.2.3	None
Universal Windows	ReactiveUI	nuget v11.2.3	ReactiveUI.Events
WPF	ReactiveUI.WPF	nuget v11.2.3	ReactiveUI.Events.WPF
Windows Forms	ReactiveUI.WinForms	nuget v11.2.3	ReactiveUI.Events.WinForms
Xamarin.Forms	ReactiveUI.XamForms	nuget v11.2.3	ReactiveUI.Events.XamForms
Xamarin.Essentials	ReactiveUI	nuget v11.2.3	ReactiveUI.Events.XamEssentials
Xamarin.Android	ReactiveUI.AndroidSupport	nuget v11.2.3	ReactiveUI.Events
Xamarin.iOS	ReactiveUI	nuget v11.2.3	ReactiveUI.Events
Xamarin.Mac	ReactiveUI	nuget v11.2.3	ReactiveUI.Events
Tizen	ReactiveUI	nuget v11.2.3	ReactiveUI.Events
Platform Uno	ReactiveUI.Uno	nuget v11.2.3	None
Avalonia	Avalonia.ReactiveUI	nuget v0.9.4	None
Any	ReactiveUI.Validation	nuget v1.4.10	None

OBSERVABLE WHEN ANY VALUE INVOKE COMMAND
REACTIVE COMMAND FROM TASK SELECT
THROTTLE SCHEDULER PROPERTY RAISE
WHEN ACTIVATED COMMAND
CREATE FROM OBSERVABLE MERGE COMBINE LATEST
DISPOSE WITH ZIP SUBJECT SUBSCRIBE REACTIVE

You, I, and ReactiveUI Samples



https://reactiveui.net/book

https://github.com/kentcb

slack

Join the Slack workspace
Reactive, Inc.

What is your **email address**?

you@example.com

https://reactiveui.net/slack