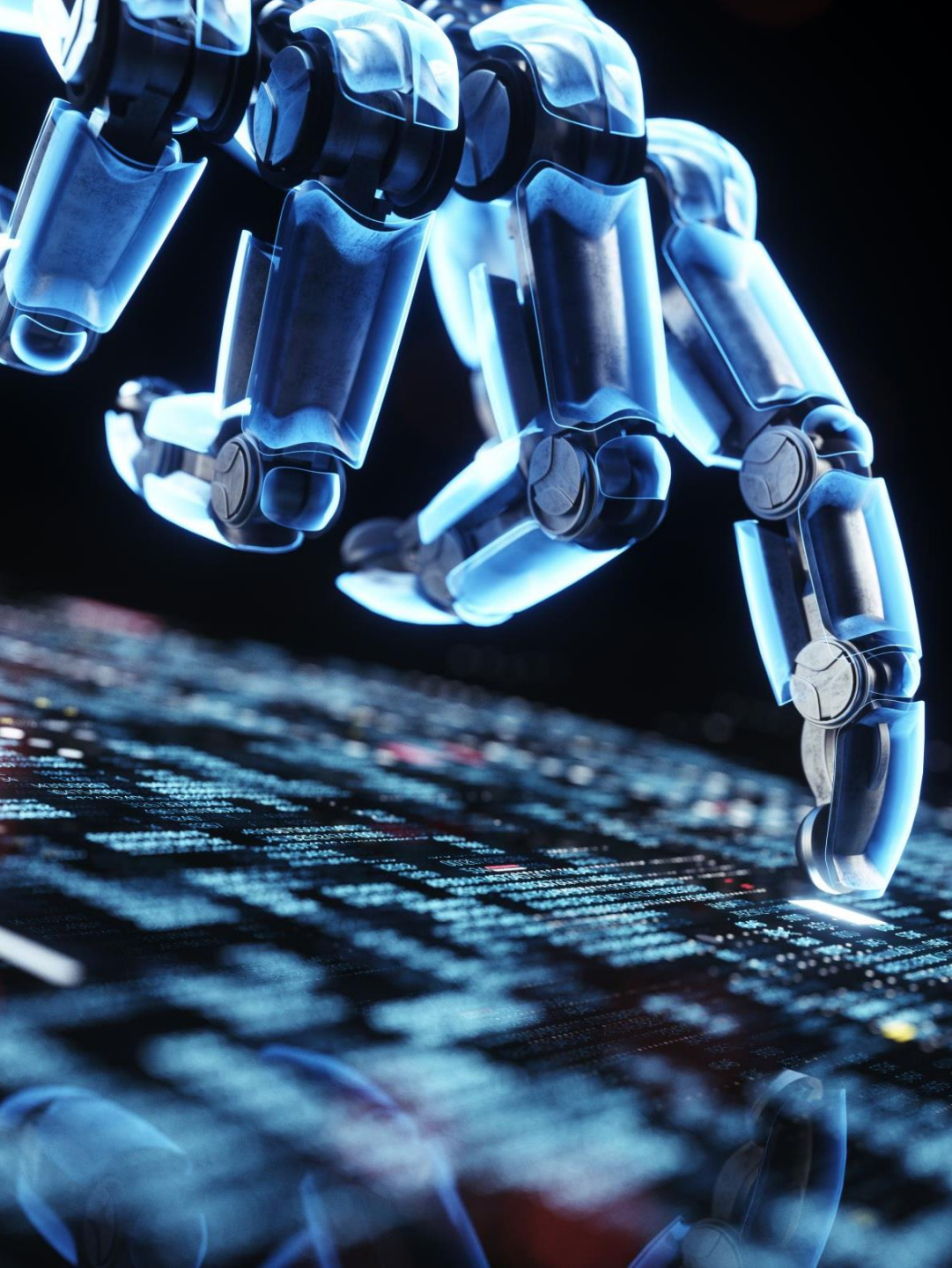




# XAML-Clients mit WinUI, .NET MAUI, WPF, Uno Platform and Avalonia UI

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## Topics

- Many promising XAML technologies
- View-models for all!
- Specific features/issues
- What to chose?



# Christian Nagel

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- Veteran developer
  - Book author
  - Microsoft MVP
  
  - Training
  - Coaching
  - Development
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# Wer bin ich?

- Sebastian Szvetecz
- Trainer, Developer
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- Österreich
- CN innovation



# XAML-based Technologies

- WPF
  - Many existing applications
- WinUI
  - Modern UI, Controls, enhanced syntax
  - Windows uses it
- .NET MAUI
  - Microsoft supported mobile app development
- Uno Platform
  - WinUI controls
- Avalonia UI
  - “WPF 2.0”



iOS macOS

iOS macOS

iOS macOS



# What's common

- Common view-models
- Community toolkit
- Source code generator
- XAML Syntax



# Dive into WPF

- Open source
  - <https://github.com/dotnet/wpf>
- Updates with .NET 8
  - Hardware acceleration for remote desktop
  - OpenFileDialog
- Roadmap
  - .NET 9 - Windows 11 Theming

# WPF – What you've seen

- Source Code Repo and progress
- Upgrade assistant
  - Upgrade .NET Framework WPF to new versions
  - Existing WPF applications can move further
- Template Studio for WPF
- Shared View-Models
- Basic UX
- Basic controls



# Dive into WinUI...



- Successor of UWP
- Features of WPF
  - No installation required
  - Use .NET libraries
- Modern XAML
- Used by Windows 11

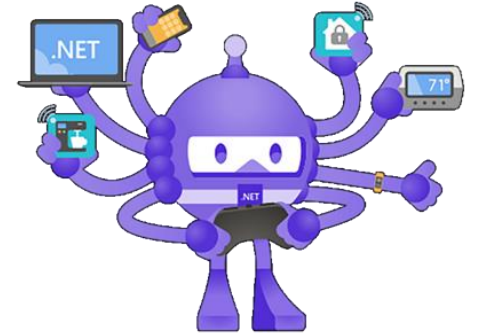
# WinUI – What you've seen



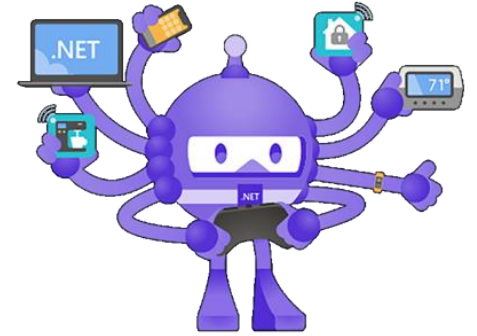
- WinUI 3 Gallery / Community Toolkit Gallery
- Template Studio for WinUI
- Shared View-Models
- Features
  - Modern UI/UX – Fluent Design System
  - Compiled binding
  - Animations, transitions
  - Controls

# Dive into .NET MAUI

- Successor of Xamarin.Forms
- Abstraction of
  - Windows 10 (1809+)
  - Android 5 (API 21)
  - iOS 11
  - MacOS 10.15
- Wrapper controls using renderers (handlers)
- Supports hybrid Blazor (needs newer platforms)
- XAML differences



# .NET MAUI – What you’ve seen



- MAUI App Accelerator
- Simpler than Xamarin.Forms
- Platform specific code
- Blazor Integration
- Shared View-Models
- Unified project structure
- Binding
- Shell
- Restrictions



# Dive into Uno Platform



- Windows 10+
- WebAssembly
- iOS, MacCatalyst
- Android
- MacOS AppKit
- Skia (Linux with X11/Wayland, Linux framebuffer, macOS, Windows 7+)
- Figma
- Themes
- Many controls
  - Uno toolkit, community toolkit, third party...
- .NET MAUI Embedding
- XAML Islands for WPF

# Uno Platform – What you've seen

- Windows calculator running in WebAssembly
- Support for WinUI controls
- Support for MAUI controls
- Integration in WPF application
- Many platforms



# Dive into Avalonia UI



- Consistent look across different platform
- Avalonia rendering engine
- Android 4.4+, iOS 11+, Windows 7+, MacOS 10.12+, Linux, WebAssembly, *Tizen (coming soon)*
- Fluent style
- Designer
- Compiled Binding
- Various convenient XAML features
- Cross-platform WPF with Avalonia XPF ( 💰 )

# Avalonia UI – What you've seen

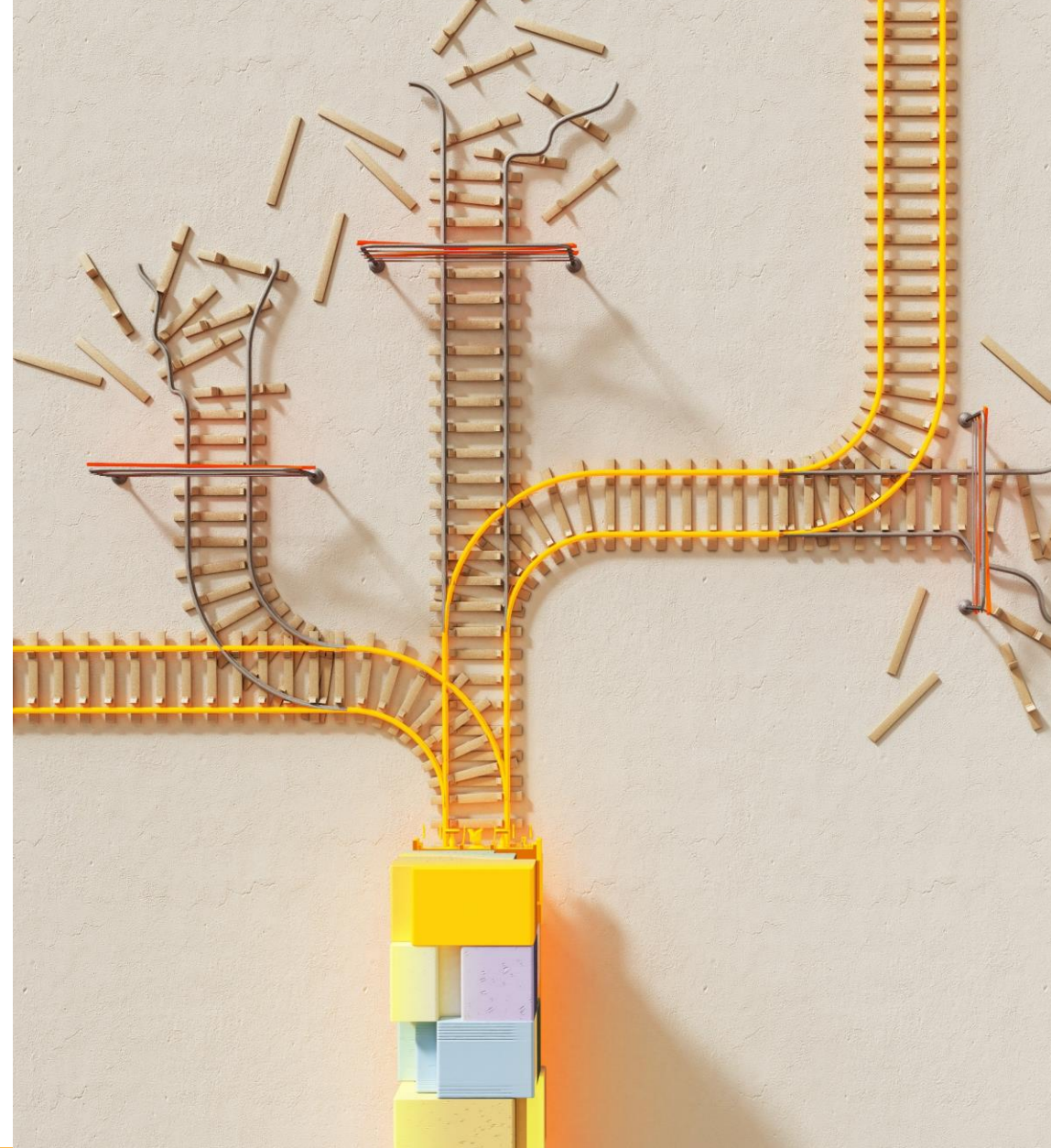


- Shared View-Models
- Binding
- Convenience attributes
- CSS-like styling
- Data Templates Collection
- Limited controls



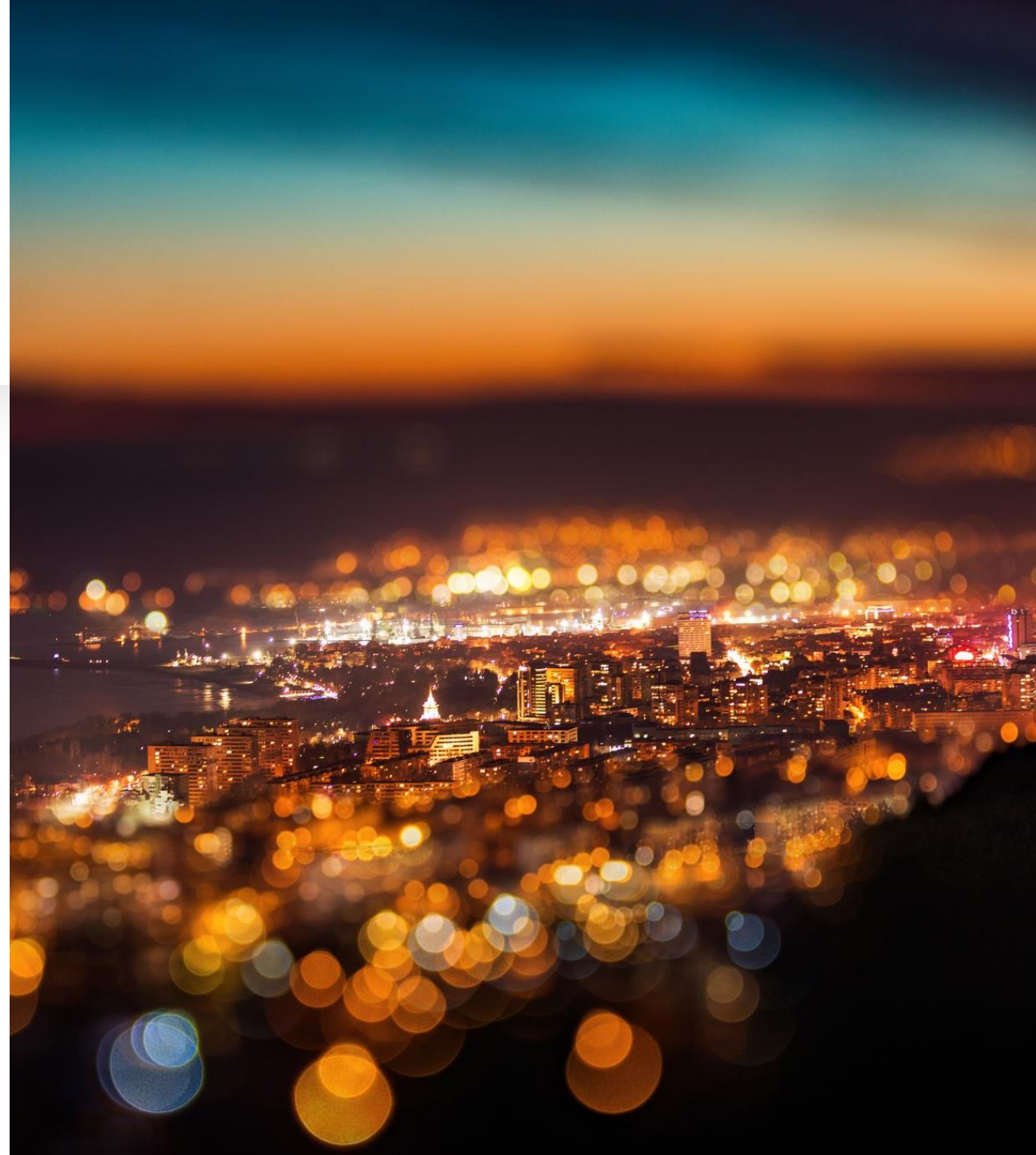
# How to choose...

- Existing WPF applications?
- Full Windows support needed?
- Running on mobile devices?
- Using native controls?
- The same look at every platform?
- Using WebAssembly?



# Summary

- Shared View-Models
- WPF – WinUI – .NET MAUI –  
Uno Platform – Avalonia UI



# Thank you for joining!

- Questions?
- <https://github.com/cnilearn/bastaspring2024>
- <https://csharp.christiannagel.com>
- <https://www.cninnovation.com>

