

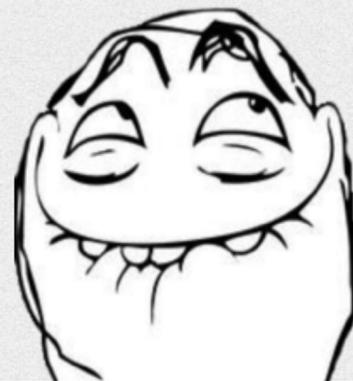
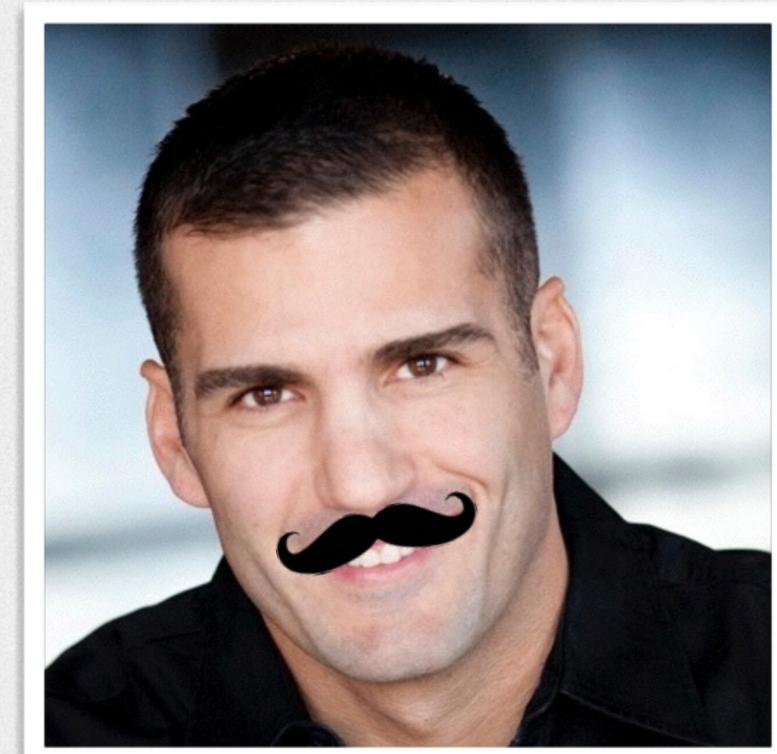
Introducing

The Great CALayer Tour

Presented by Scott Gardner

About Me

- ⚙️ Scott Gardner
- ⚙️ iOS developer for 4+ years
- ⚙️ Author of *Transitioning to Swift*
- ⚙️ Speaking at CocoaConf Chicago ,
March 2015
- ⚙️ LinkedIn: **scotteg.com**
- ⚙️ Twitter: **@scotteg**



Tech Talk Overview

⚙ Things to Know

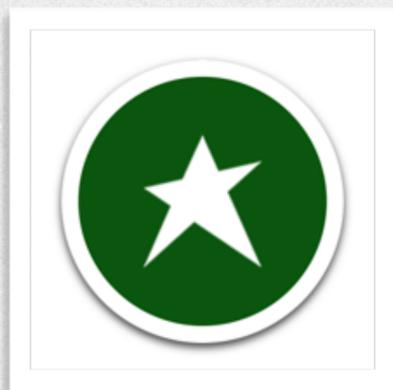
- ⚙ CALayer and Subclasses

⚙ Demos

- ⚙ Getting Started
- ⚙ Layer Player Tour
- ⚙ Layer Player Code



Things to Know: CALayer & Subclasses



CALayer



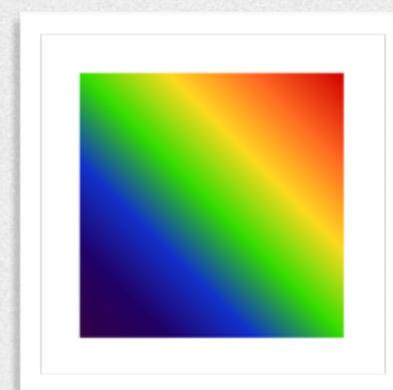
CAScrollLayer



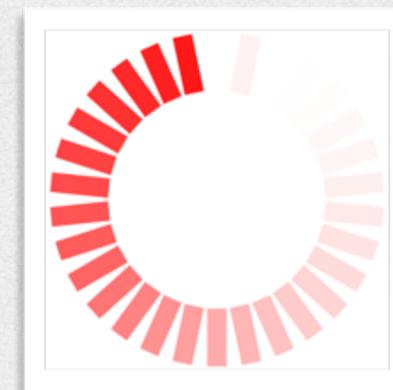
CATextLayer



AVPlayerLayer



CAGradientLayer



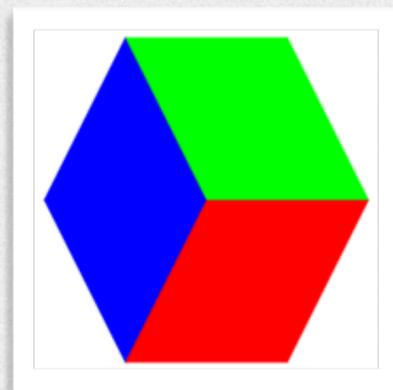
CAReplicatorLayer



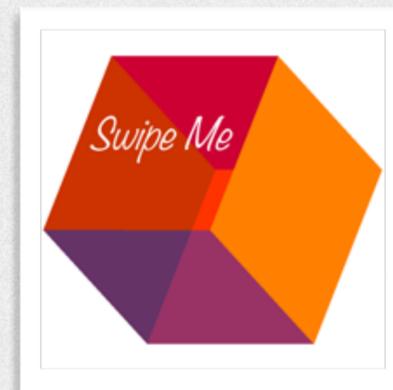
CATiledLayer



CASHapeLayer



CAEAGLLayer



CATransformLayer

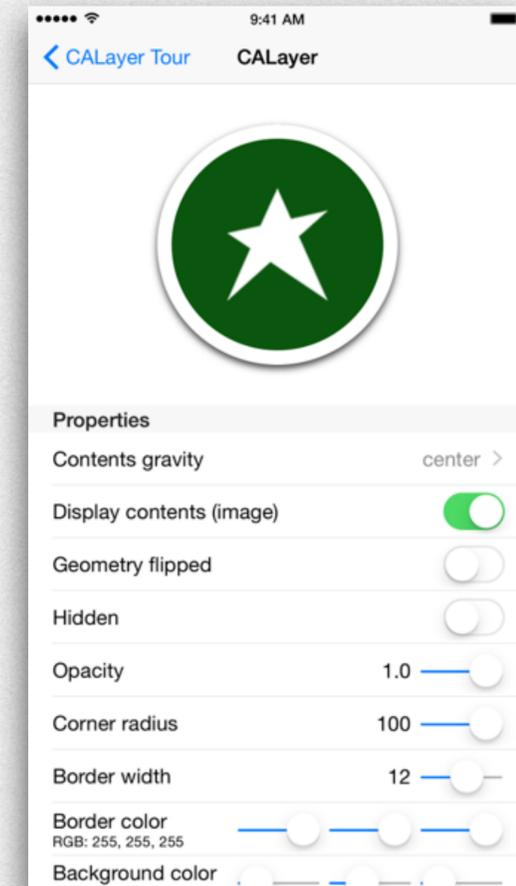


CAEmitterLayer



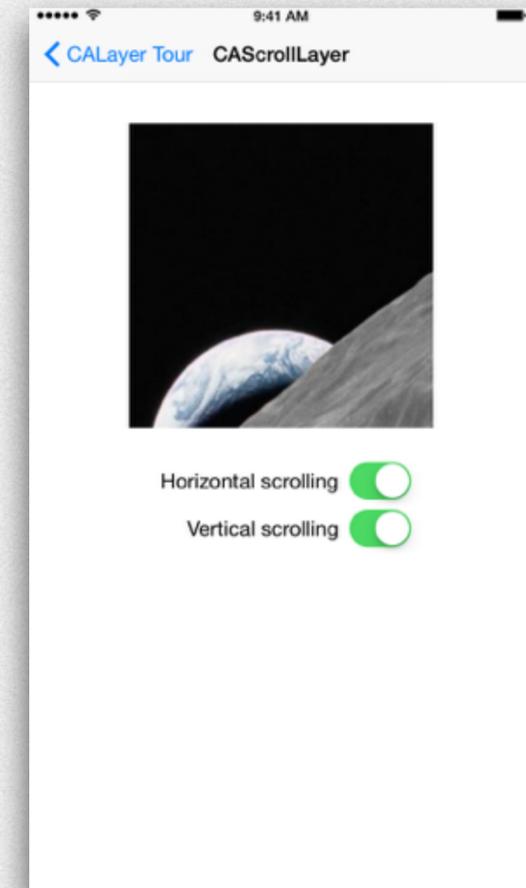
Things to Know: CALayer

- ⚙️ Base Layer Class
 - ⚙️ Manage and animate visual content
 - ⚙️ All views have a backing layer
 - ⚙️ Better performance than UIViews
 - ⚙️ Many helpful properties
 - ⚙️ Most automatically animated
 - ⚙️ Can add additional animations
 - ⚙️ Can be hit tested*



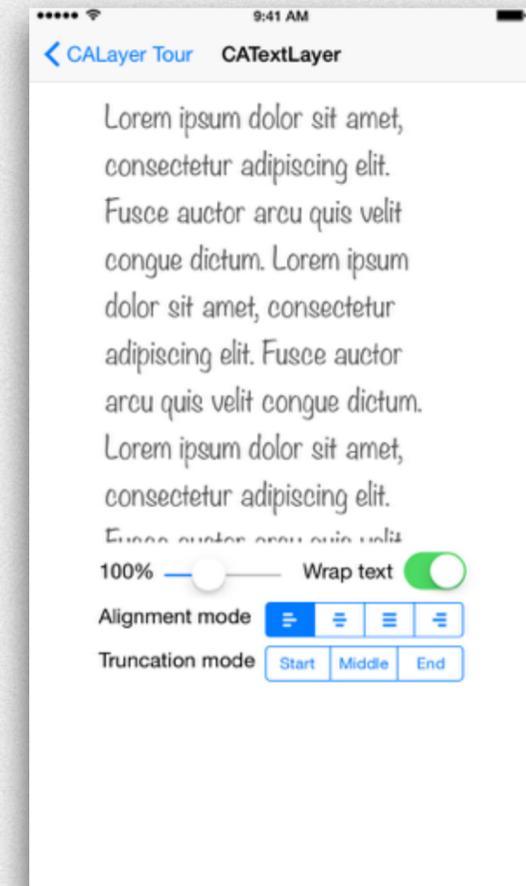
Things to Know: CAScrollLayer

- ⚙️ Display portion of a scrollable layer
 - ⚙️ Can lock horizontal and/or vertical
 - ⚙️ UIScrollView doesn't use it
 - ⚙️ Cannot directly react to touch or bounds check
 - ⚙️ Use UIScrollView when scrolling is touch-based
 - ⚙️ Use CATiledLayer when scrolling large images



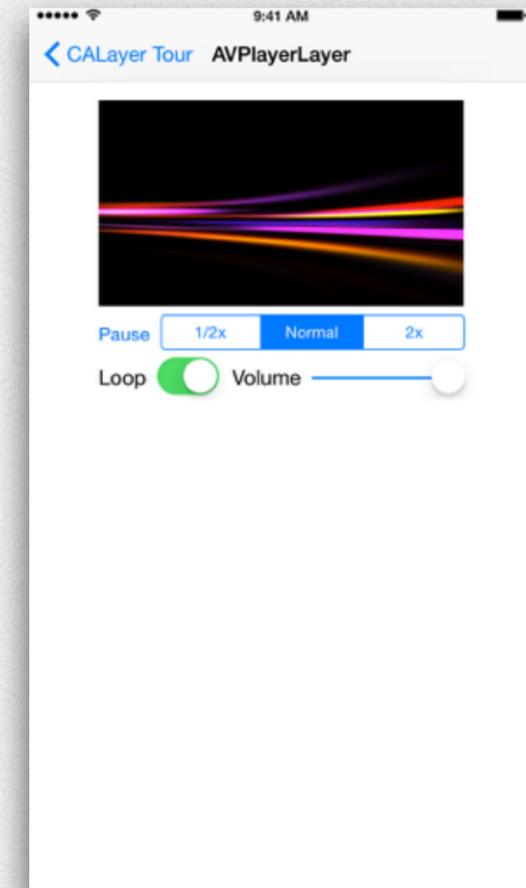
Things to Know: CATextLayer

- ⚙️ Render plain text or attributed strings
 - ⚙️ Similar capabilities as UILabel
 - ⚙️ Can change text, font, size, color, wrapping, alignment, and truncation



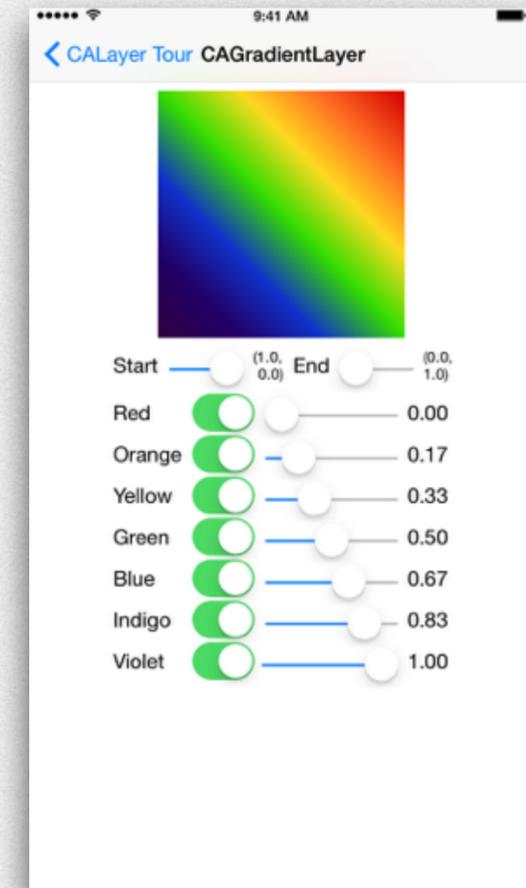
Things to Know: AVPlayerLayer

- ⚙️ Display an AV player
 - ⚙️ Can change player and videoGravity and videoRect
 - ⚙️ AVPlayer includes play(), pause(), rate, and seeking
 - ⚙️ AVPlayerItem has many useful properties and callbacks



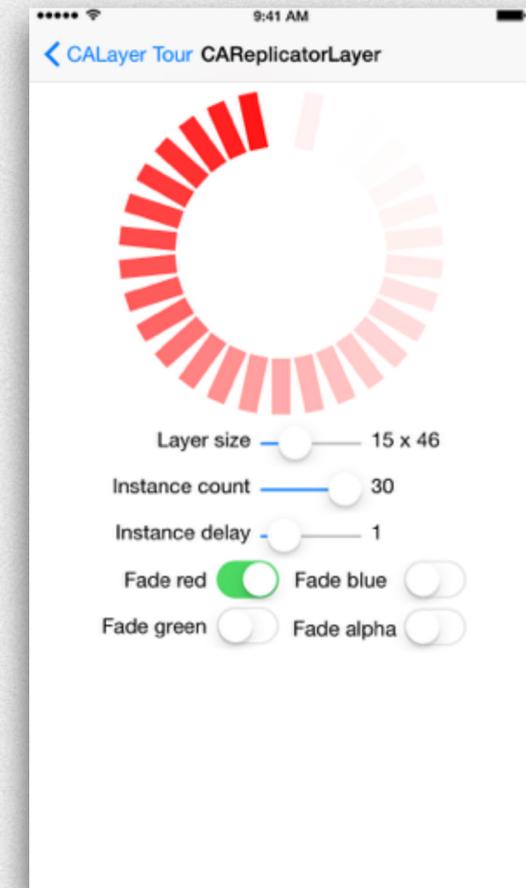
Things to Know: CAGradientLayer

- ⚙️ Apply a color gradient over the background
- ⚙️ Faster than using Core Graphics
- ⚙️ Can change colors, locations*, and start/end points



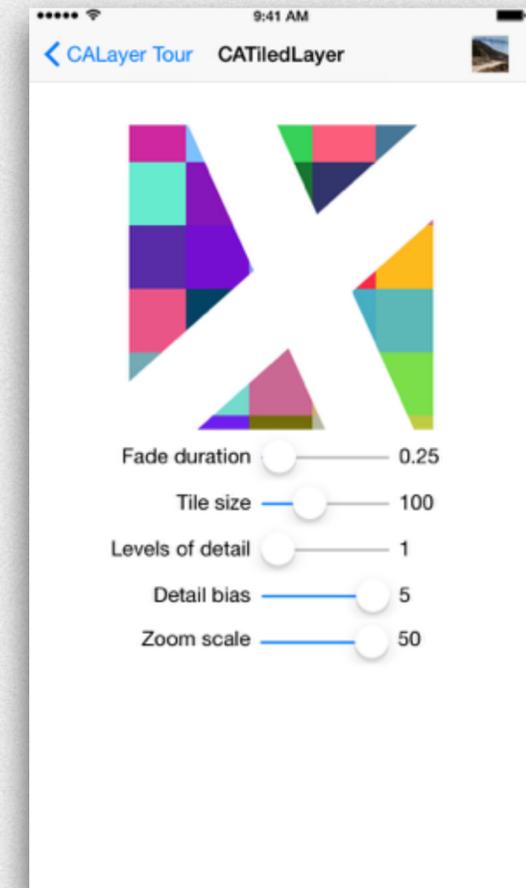
Things to Know: CAReplicatorLayer

- ⚙️ Duplicate a source layer
 - ⚙️ Creates specified number of copies
 - ⚙️ Applies a transform to each copy
 - ⚙️ Can delay drawing of each copy
 - ⚙️ Can preserve depth



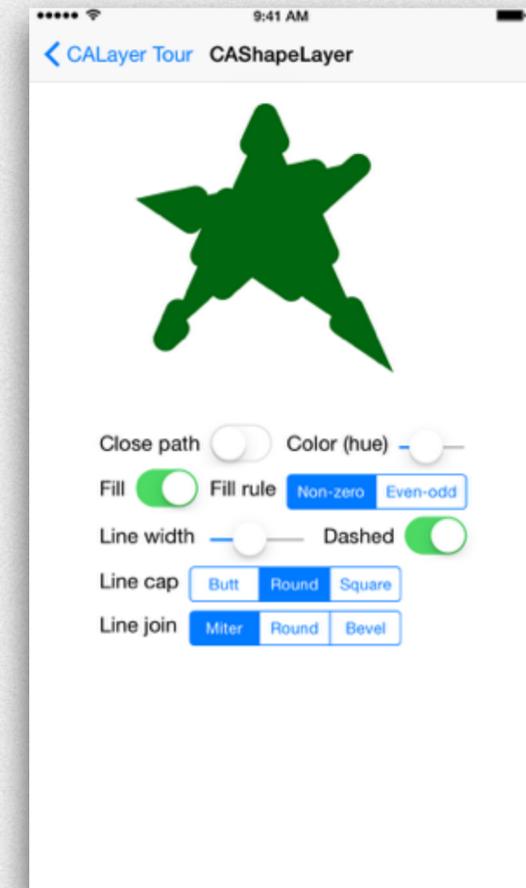
Things to Know: CATiledLayer

- ⚙️ Asynchronously draw layer content in tiles
- ⚙️ Can be used to asynchronously draw a large image
 - ⚙️ Layer Player project includes tile cutter*
- ⚙️ Can change tile size, resolution, and fade duration



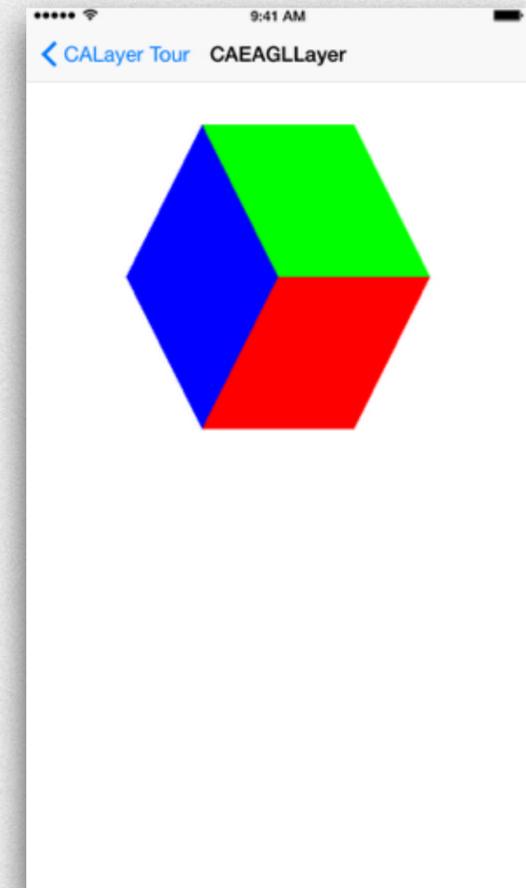
Things to Know: CAShapeLayer

- ⚙ Draw using scalable vector paths
 - ⚙ Faster than `layer.contents = UIImage(named: ...)`
 - ⚙ No pixelation, no clipping, and preserves aspect ratio
 - ⚙ Can change line thickness and dashing, how lines end or join other lines, and line and fill color
 - ⚙ Tip: use PaintCode to create image path code
 - ⚙ Save \$20 on PaintCode: bit.ly/PaintCodeRocks



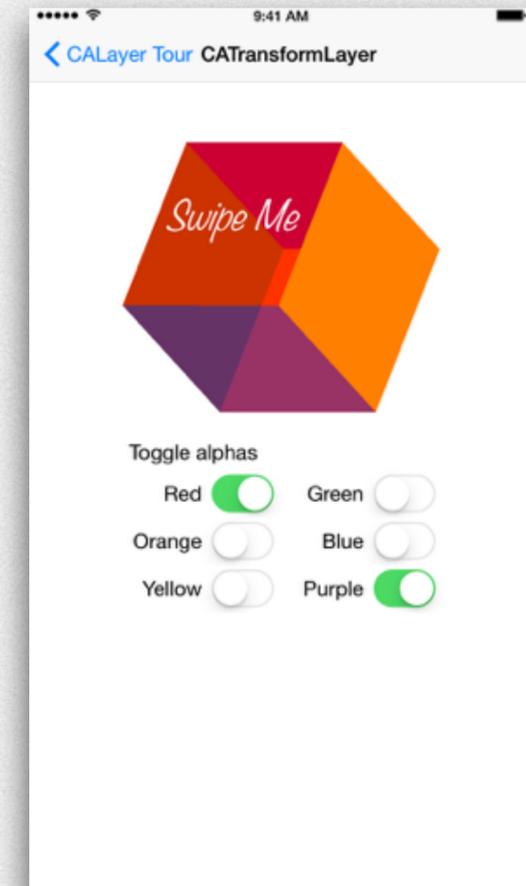
Things to Know: CAEAGLLayer

- ⚙ Draw OpenGL content
 - ⚙ Should make layer opaque and match bounds
 - ⚙ Should not transform
 - ⚙ Avoid drawing additional layers on top
 - ⚙ Optionally override `UIView.layerClass()`
 - ⚙ Use `GLKView` or `CAMetalLayer` instead



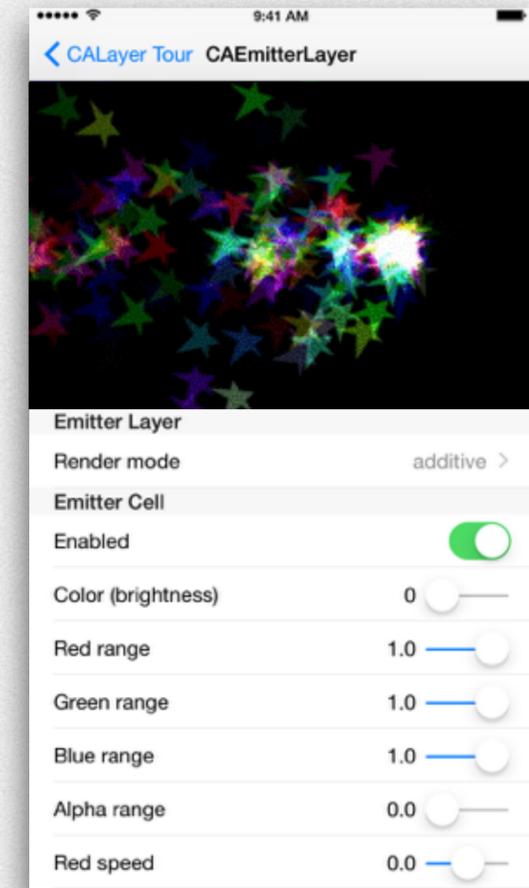
Things to Know: CATransformLayer

- ⚙ Draw 3D structures
 - ⚙ Does not flatten its sublayers
 - ⚙ Each sublayer has its own opacity
 - ⚙ Transform is applied to sublayers
 - ⚙ Transform ignores changes to rendered layer properties
 - ⚙ Cannot directly hit test
 - ⚙ ...but can hit test sublayers



Things to Know: CAEmitterLayer

- ⚙️ Render animated particles
 - ⚙️ Particles are instances of CAEmitterCell
 - ⚙️ Draws particles above backgroundColor and border
 - ⚙️ Can change render mode and emitter position, shape, size, spin, velocity, birth rate, and lifetime
 - ⚙️ Can preserve depth to render in 3D
 - ⚙️ Can change cell contents, color, speed of color change, scale, emission latitude/longitude, initial velocity, acceleration, birth rate, lifetime, and magnification/minification filters



Introducing

The Great CALayer Tour

Demos

Where To Go From Here?

- ⚙️ Download **Layer Player** from App Store
- ⚙️ Read *12 Ways To Score Wins With Layers* tutorial on raywenderlich.com
- ⚙️ Practice, practice, practice!
- ⚙️ Drop me a note anytime! :]
⚙️ @scotteg



fin

